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Stability of Parts-Per-Billion Hazardous Organic Cylinder Gases and Performance Audit Results of Source Test and Ambient Air Measurement Systems. Status Report 4

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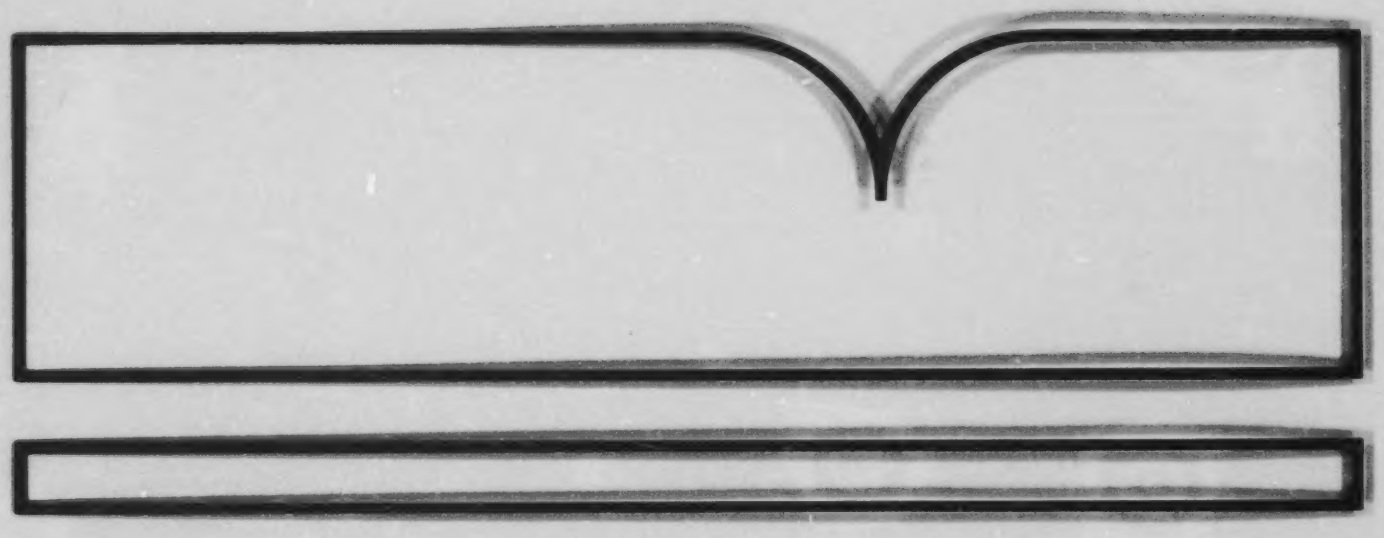

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16. ABSTRACT

An evaluation of 29 gaseous organic compounds at PPB levels in compressed gas cylinders was conducted by the U.S.Environmental Protection Agency (EPA). Primary objectives of this on-going project are to 1) evaluate the quality of measurements made by EPA, state/local agencies or their contractors by using ppb gas cylinders for performance audits to assess relative accuracy of source measurement systems during hazardous waste trial burn tests and ambient air monitoring programs; 2) verify the manufacturer's certified analysis of the multi-component gas mixtures; 3) determine stability of gas mixtures with time; and 4) develop new audit materials as requested by EPA. Cylinders consist of 5 mixtures of 5, 6, 7, 9, and 18 organic compounds each. These mixtures were blended by a commercial gas supplier in aluminum cylinders in a balance gas of nitrogen. The 5-component mixture (Group I) contains carbon tetrachloride, chloroform, perchloroethylene, vinyl chloride and benzene. The 9-component mixture (Group II) includes trichloroethylene, 1,2-dichloroethane, 1,2-dibromoethane, acetonitrile, trichlorofluoromethane (F-11), dichlorofluoromethane (F-12), bromomethane, methyl ethyl ketone and 1,1,1-trichloroethane. The 7-component mixture (Group III) includes vinylidene chloride, 1,1,2-trichloro-1,2,2-trifluoroethane (F-113), 1,2-dichloro-1,1,2,2-tetrafluoroethane (F-114), acetone, 1,4-dioxane, toluene, and chlorobenzene. The 6-component mixture (Group IV) includes acrylonitrile, 1,3-butadiene, ethylene oxide, methylene chloride, propylene oxide and o-xylene. The 18-component mixture (Group V) includes compounds from Groups I thru IV. To date, 198 performance audits have been initiated and 172 completed. Results of these audits and description of experimental procedures used for analyses and available stability data are in Status Report #4.

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STABILITY OF PARTS-PER-BILLION HAZARDOUS ORGANIC CYLINDER GASES AND PERFORMANCE AUDIT RESULTS OF SOURCE TEST AND AMBIENT AIR MEASUREMENT SYSTEMS

STATUS REPORT #4

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FOREWORD

Source measurement and monitoring efforts are designed to anticipate potential environmental problems, to support regulatory actions by developing data bases needed in developing regulations and to provide means of monitoring compliance with regulations. The Environmental Monitoring Systems Laboratory, Research Triangle Park, North Carolina, has the responsibility for implementation of agency-wide Quality Assurance programs for air pollution measurement systems; and supplying technical support to other groups in the Agency including the Office of Air and Radiation, the Office of Toxic Substances, and the Office of Enforcement.

The need for reliable standards for auditing and documenting the accuracy of source emission measurement of organic hazardous pollutants is well established. The Quality Assurance Division of EPA's Environmental Monitoring Systems Laboratory has responded to this need through the development of compressed gas cylinders containing gaseous organic compounds in parts-per-billion (ppb) levels. The primary objectives of this on-going project are (1) to evaluate the quality of measurements made by EPA, state/local agencies, or their contractors, by using ppb gas cylinders for performance audits during hazardous waste trial burn tests and ambient air monitoring programs; (2) to verify the manufacturer's certified analysis of the multi-component gas mixtures, (3) to determine the stability of the gas mixtures with time, and (4) to develop new audit materials as requested by EPA. This report describes the current status of this project. Included in the report are (1) a description of the experimental procedures used for the analyses of multi-component ppb level gas mixtures; (2) a description of the audit procedure, and (3) currently available audit results and stability data.

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ABSTRACT

The U.S. Environmental Protection Agency (USEPA) has evaluated the suitability of 29 gaseous organic compounds at parts-per-billion (ppb) levels in compressed gas cylinders for use as audit materials during hazardous waste trial burn tests and ambient air measurements. The primary objectives of this on-going project are: (1) to evaluate the quality of measurements made by USEPA, state/local agencies, or their contractors by using ppb gas cylinders for performance audits during hazardous waste trial burn tests and ambient air monitoring programs; (2) to verify the manufacturer's certified analyses of the multi-component gas mixtures; (3) to determine the stability of the gas mixtures with time; and (4) to develop new audit materials as requested by USEPA.

The cylinders consist of five mixtures of five, six, eight, nine, and eighteen organic compounds each. These mixtures were blended by a commercial gas supplier in aluminum cylinders in a balance gas of nitrogen. The five-component mixture (Group I) contains carbon tetrachloride, chloroform, tetrachloroethylene (perchloroethylene), vinyl chloride and benzene. The nine-component mixture (Group II) includes trichloroethylene, 1,2-dichloroethane (ethylene dichloride), 1,2-dibromoethane (ethylene dibromide), acetonitrile, trichlorofluoromethane (F-11), dichlorodifluoromethane (F-12), bromomethane (methyl bromide), methyl ethyl ketone and 1,1,1-trichloroethane. The eight-component mixture (Group III) includes pyridine*, vinylidene chloride, 1,1,2-trichloro-1,2,2-trifluoroethane (F-113), 1,2-dichloro-1,1,2,2-tetrafluoroethane (F-114), acetone, 1,4-dioxane, toluene, and chlorobenzene. The six-component mixture (Group IV) includes acrylonitrile, 1,3-butadiene, ethylene oxide, methylene chloride, propylene oxide, and o-xylene. The eighteen-component mixture (Group V) includes vinyl chloride, 1,3-butadiene, bromomethane, trichlorofluoromethane (F-11), methylene chloride, chloroform, 1,2-dichloroethane, 1,1,1-trichloroethane, benzene, carbon tetrachloride, 1,2-dichloropropane, trichloroethylene, toluene, 1,2-dibromoethane, tetrachloroethylene, chlorobenzene, ethylbenzene, and o-xylene. To date 198 performance audits have been initiated and 172 are

*Although Group III cylinders contain pyridine, the concentrations are not certified due to severe analytical difficulties.

complete. The results of these audits and a description of the experimental procedures used for analyses and available stability data are presented in this status report. Generally, the results of the audits show reasonable agreement (plus or minus 50 percent) with the audit material concentrations measured by Research Triangle Institute (RTI), considering the low concentrations of the organics and the anticipated uncertainty associated with independent analyses conducted by an audit laboratory.

Quality assurance of the concentrations of the organics in Groups I - V is provided by EPA auditing of the audit laboratory (RTI) using NBS-traceable standards for these Groups prepared by NBS under a EPA-NBS Interagency Agreement, and by the subsequent use of the NBS-traceable standards to assign the concentrations in the cylinders obtained from the commercial gas supplier that are used in this audit program. The NBS-traceable standards also are used by RTI to ensure quality control in reanalyses conducted over time to verify the long-term stability of the audit cylinders.

Stability studies for all Group I, Group II, Group III, Group IV and Group V compounds have been performed. Results have established that all the compounds tested are suitably stable for use as reliable audit materials except ethylene oxide and propylene oxide at low concentrations.

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SECTION 1
INTRODUCTION

OBJECTIVES

The application of Quality Assurance practices is important to the generation of high-quality environmental data. The Quality Assurance Division of USEPA's Environmental Monitoring Systems Laboratory has initiated a program to supply audit materials for use during hazardous waste trial burn tests and ambient air measurements. RTI, under contract with USEPA, has responded to this need through development of cylinder gases containing 29 gaseous organic compounds at ppb levels. The main objectives of this project are: (1) to evaluate the quality of measurements made by USEPA, state/local agencies, or their contractors, by using ppb gas cylinders for performance audits to assess the relative accuracy of source measurement systems during hazardous waste trial burn tests and ambient air monitoring programs; (2) to verify the manufacturer's certified analysis of the multi-component gas mixtures; (3) to determine the stability of the gas mixtures over time; and (4) to develop new audit materials as requested by USEPA.

This report describes the current status of the project. Included in the report are: (1) a description of the experimental procedures used for the analyses of multi-component ppb level gas mixtures; (2) a description of the audit procedure; and (3) currently available audit results and stability data.

AUDIT MATERIALS CURRENTLY AVAILABLE

Currently, 29 gaseous compounds selected on the basis of the anticipated needs of USEPA's Office of Solid Waste and Office of Air Quality Planning and Standards have been investigated for suitability as audit materials. Table 1 lists the 29 organic compounds, the concentration ranges, and the number of cylinders for each group currently available in the ppb level cylinder gases. Group I cylinders each contain five (5) compounds; Group II cylinders each contain nine (9) compounds; Group III cylinders each contain eight (8) compounds; Group IV cylinders each contain six (6) compounds; and Group V cylinders each contain eighteen (18) compounds. The audit cylinders fall into three concentration ranges, depending upon the group to which the cylinder belongs. Each compound in the low concentration range is between 7 and 90 ppb and in the intermediate concentration range is between 90 and 430

ppb. In addition, Group I and Group IV cylinders are available in a high concentration range between 430 and 10,000 ppb. The Group V cylinders are available in the concentration range between 1-40 ppb. The balance gas for all gas mixtures is nitrogen, and the cylinder construction material is aluminum.

Table 1. PPB Level Organic Gases Currently Available

Group	No. of Cylinders	Concentration Range of Each Compound (ppb)
Group I*	29	7-90
	12	90-430
	12	430-10,000
Group II**	12	7-90
	6	90-430
Group III***	14	7-90
	3	90-200
Group IV****	12	7-90
	6	430-10,000
Group V*****	6	1-40

*Group I Compounds: Carbon tetrachloride, chloroform, tetrachloroethylene, benzene, and vinyl chloride.

**Group II Compounds: Trichloroethylene, 1,2-dichloroethane, 1,2-dibromoethane, acetonitrile, trichlorofluoromethane (F-11), dichlorodifluoromethane (F-12), bromomethane, methyl ethyl ketone, and 1,1,1- trichloroethane.

***Group III Compounds: Pyridine(1), Vinylidene Chloride, 1,1,2-trichloro-1,2,2-trifluoroethane (F-113), 1,2-dichloro-1,1,2,2-tetrafluoroethane (F-114), acetone, 1,4-dioxane, toluene, and chlorobenzene.

(1)Pyridine concentrations are not certified due to analytical problems

****Group IV Compounds: Acrylonitrile, 1,3-butadiene, ethylene oxide, methylene chloride, propylene oxide, and o-xylene.

*****Group V Compounds: Vinyl chloride, 1,3-butadiene, bromomethane, trichlorofluoromethane (F-11), methylene chloride, chloroform, 1,2-dichloroethane, 1,1,1-trichloroethane, benzene, carbon tetrachloride, 1,2-dichloropropane, trichloroethylene, toluene, 1,2-dibromoethane, tetrachloroethylene, chlorobenzene, ethylbenzene, and o-xylene.

SECTION 2
EXPERIMENTAL PROCEDURES

Accurate analyses of the cylinder gases are required (1) to verify the concentrations reported by the specialty gas company which prepared the gas mixtures, and (2) to assess the long-term stability of the concentrations of the compounds.

INSTRUMENTATION

Analyses of Group I, II and III mixtures are performed prior to 1987 using a Hewlett-Packard 5880A gas chromatograph equipped with flame ionization and electron capture detectors. The electron capture detector (ECD) is used principally for measurement of all the halogenated hydrocarbons except vinyl chloride. The flame ionization detector (FID) is used for the analysis of vinyl chloride, benzene, methyl ethyl ketone, acetonitrile, all Group III compounds, and all of the Group I compounds in the high concentration range cylinders. The gaseous samples are injected onto the gas chromatographic column by means of two Valco six-port gas sampling valves mounted near the injection port. One valve is equipped with interchangeable sampling loops (1 cc and 3 cc) to allow the injection of different volumes of the gas mixtures. A schematic of the gas chromatographic system is shown in Figure 1. A schematic of the system used for generation of calibration standards is shown in Figure 2.

The gas chromatographic parameters used in the measurement of individual compounds in Group I, Group II and Group III are listed in Table 2.

Within the past year, a new method was developed for the analysis of all the ppb level cylinder gases. This method employs automated cryogenic preconcentration with cryofocusing and flame ionization detection. Analyses of Group I, II, III, IV, and V mixtures are now performed using a Nutech automated cryotrapping apparatus configured to a Hewlett-Packard 5880A gas chromatograph equipped with a flame ionization detector (FID). A schematic of the gas chromatographic system is shown in Figure 3.

The gas chromatographic parameters used in the measurement of individual compounds in Group I, Group II, Group III, Group IV and Group V using this new method are listed in Table 2A.

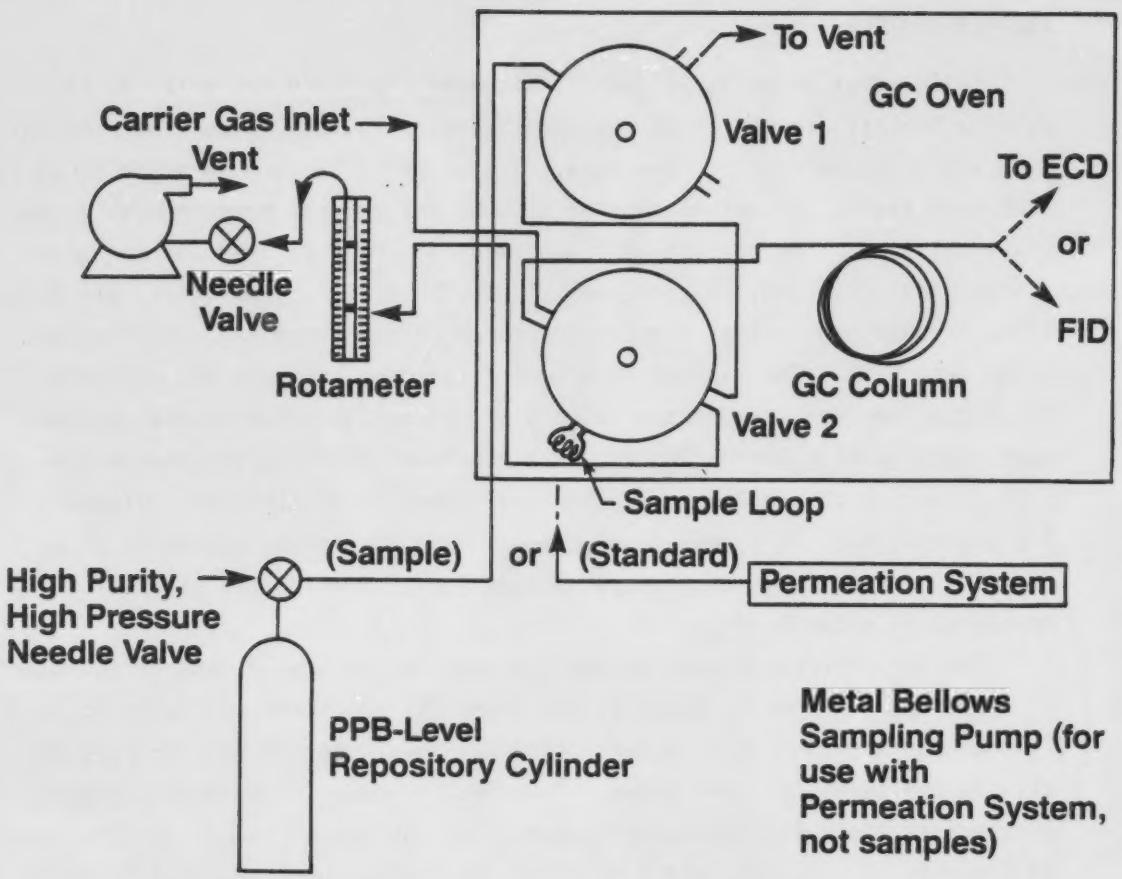

Figure 1. Schematic of the Gas Chromatographic System

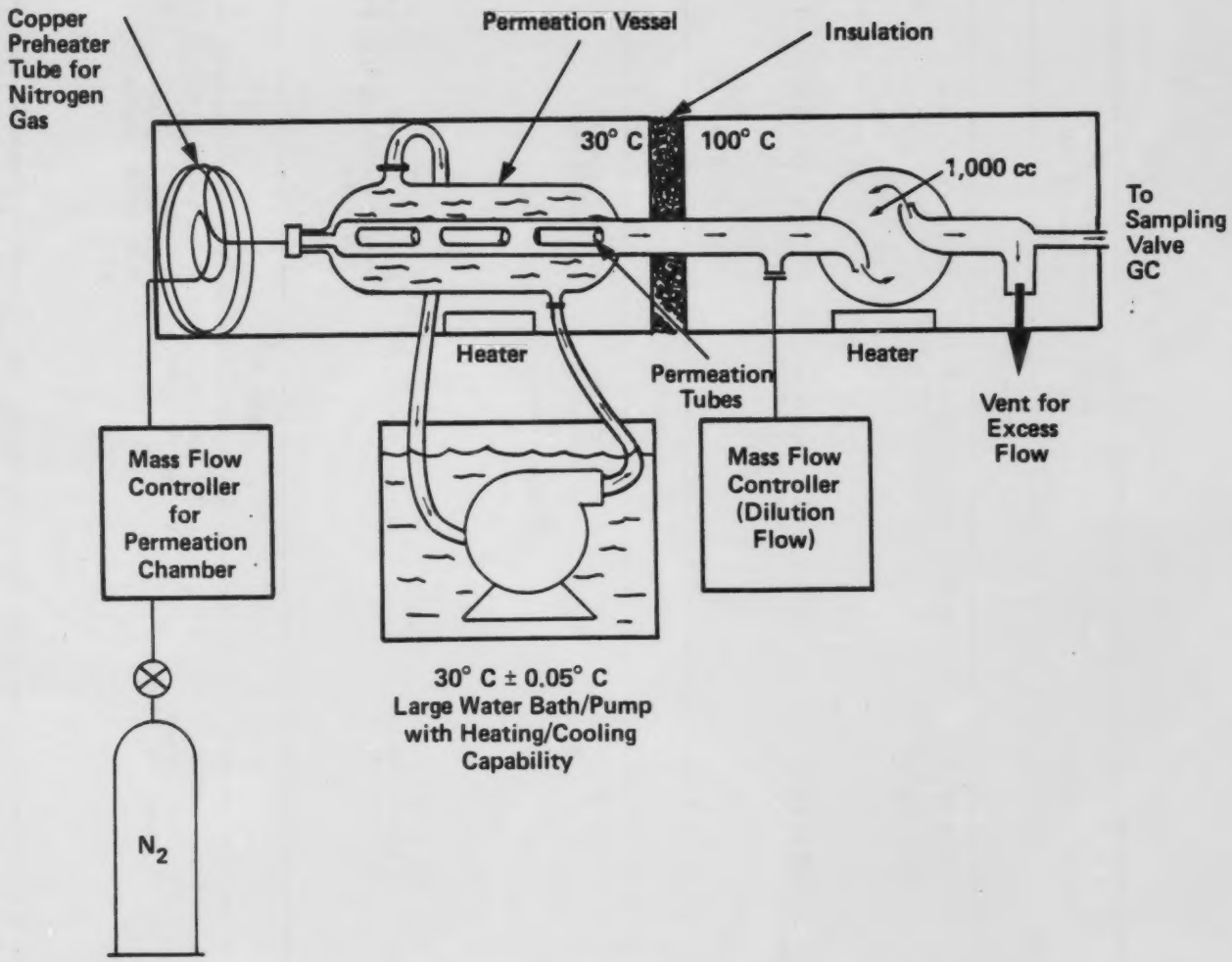

Figure 2. Schematic of the Permeation System

Table 2. GC Conditions for Analysis of PPB-Level Cylinder Gases

Compounds	Detector	Injector Temp.	Column Temp./ Carrier Gas	Column Type	Comments
			GROUP I		
Vinyl chloride Benzene	FID at 200°C 35 cc/min Hydrogen 500 cc/min Air	100°C	80°C, Isothermal/ Nitrogen at 55 cc/min	10 ft. x 1/8" stainless steel column packed with 20% SP 2100 w/0.1% Carbowax 1500, 100/120 mesh	3.0 cc aluminum sample loop used
Chloroform Carbon tetrachloride Perchloroethylene	*ECD at 330°C	100°C	100°C, Isothermal/ Argon w/5% Methane; at 40 cc/min	10 ft. x 1/8" stainless steel column packed with 20% SP 2100 w/0.1% Carbowax 1500, 100/120 mesh	1.0 cc sample loop used
			GROUP II		
Freon 12 Freon 11 Bromomethane Trichloroethylene 1,2-Dibromoethane 1,2-Dichloroethane 1,1,1-Trichloroethane	ECD at 330°C	100°C	80°C, Isothermal/ Argon w/5% Methane at 2 cc/min 30 cc/min make-up	60 m x 0.32 mm DB-1 Capillary Column	1.0 cc sample loop used
Acetonitrile and Methyl Ethyl Ketone	FID at 200°C 35 cc/min Hydrogen 500 cc/min Air	100°C	170°C, Isothermal/ Nitrogen at 35 cc/min	6 ft. x 1/8" stainless steel column packed with Porapak Q, 60/80 mesh	3.0 cc aluminum sample loop used; conditioned the column 1 day
			GROUP III		
Freon 114 Freon 113 Vinylidiene Chloride Acetone Toluene 1,4-Dioxane Chlorobenzene	FID at 200°C 35 cc/min Hydrogen 500 cc/min Air	150°C	120°C, Isothermal/ Nitrogen 40 cc/min	20 ft. x 1/8" stainless steel column packed with 10% SP-1000, 80/100 Supelcoport	3.0 cc aluminum sample loop used

*The ECD was necessary only for low concentration level cylinders. For intermediate and high level cylinders, FID at the stated conditions was used.

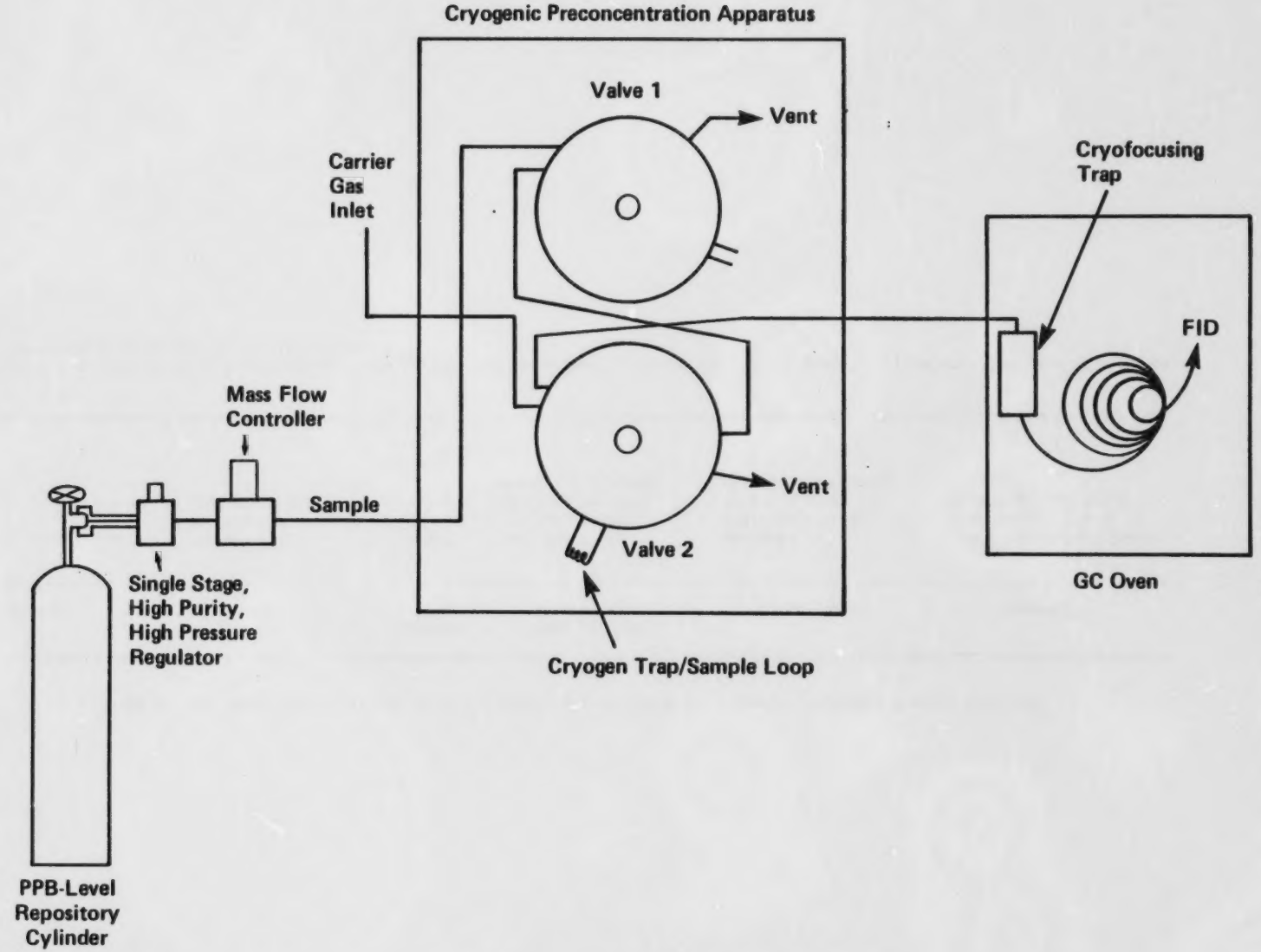

Figure 3. Schematic of the gas chromatographic system.

Table 2A. GC Conditions for Analysis of PPB-Level Cylinder Gases by Automated Cryogenic Preconcentration*

Groups	Detector	Injector Temp.	Temp. program/ Carrier Gas	Column Type	Comments
I, II, III, IV and V	FID at 275°C 30 cc/min Hydrogen 360 cc/min Air	100°C	35°C for 4 min 6°C/min to 90°C 15°C/min to 170°C Helium at 2 cc/min	Chrompack WCOT Fused Silica 50 m x 0.32 mm ID. CP-SIL-5 CB Coating	1.5 cc Stainless Steel loop used. 100 mL of sample concentrated.

*Analyses described in Table 2 were discontinued during 1987 for Groups I, II and III. The cryogenic system described here is used now for the analyses of Groups I, II, III, IV and V.

CALIBRATION

Calibration of the gas chromatograph involves measurement of known concentrations of organic gases in nitrogen. A custom-designed permeation system which produces known concentrations of organics in nitrogen had been used for all previous analyses of Group I and II cylinders prior to 1987. The details of the calibrations performed using permeation tubes are described previously (3). Currently, NBS-traceable standards developed and characterized by the National Bureau of Standards (NBS) under an EPA-NBS Interagency Agreement are being used for calibration for all five groups and a similar NBS standard cylinder mixture is used for Quality Control for all the analyses with the cryogenic preconcentration system. One NBS-traceable standard is used as a calibration cylinder that is analyzed at the beginning of each analysis day and a second similar NBS-traceable standard is used as a Quality Control cylinder that is subsequently analyzed on each analysis day.

SAMPLE ANALYSIS PROCEDURE

Figures 1 and 2 depict the entire analytical system used for the calibration and analysis of the gas mixtures prior to 1987.

Figure 3 depicts the analytical system that is used for calibration and analysis of the gas mixtures by automated cryogenic preconcentration with cryofocusing. All analyses are now done with this method. The procedure used for the sample analysis by this method is as follows: The gaseous sample is taken from the high pressure cylinder via a one-stage high pressure regulator. Sampling rate is controlled by a mass flow controller. Sample is delivered to the cryogenic preconcentration apparatus using a six-port gas sampling valve mounted on the inside of the apparatus. A second six-port gas sampling valve is used to direct sample flow through a 1.5 cc stainless steel loop packed with 60-80 mesh glass beads. Initially, the sample loop is purged with cylinder gas sample at approximately 100 cc/min for 5 minutes. After purging the sample trap, the gas flow is shut off at the second six-port gas sampling valve. The sample trap is then cooled down to a selected temperature (approx. -150°C). Once the sample trap has reached this selected temperature, gas flow is allowed to pass through the sample trap and trapping of the gas mixture begins. After a pre-determined time, injection is made automatically onto the column by heating the sample

trap. The concentrated sample is then re-focused at the head of the capillary column for two minutes. The cryofocusing trap is then heated and the actual injection is made. Triplicate injections of the sample are made to determine the measurement precision. Generally, the measurement precision is within three percent.

QUALITY CONTROL PROCEDURES

On each analysis day, the cryogenic analysis system is calibrated with either a Group I, II, III, IV or V primary gas standard prepared and analyzed by the National Bureau of Standards as part of an Interagency Agreement with USEPA. Following the calibration, a second NBS primary gas standard is analyzed as a quality control check to verify the accuracy of the calibration. These RTI quality control results are shown in Appendix A (stability study). Appendix A contains a summary table for each Group I, II, III, IV and V cylinder analyzed. Included in each summary table are the RTI stability analysis and the RTI quality control result on the day the stability analysis was conducted.

SECTION 3
PERFORMANCE AUDITS

Research Triangle Institute supplies cylinder gases for audits upon request from USEPA, state or local agencies or their contractors. A contractor must be performing hazardous waste trial burn tests or ambient air measurements at the request of USEPA, a state or local agency in order to qualify for the performance audit. When a request is received, the cylinder pressures are measured and the cylinders are shipped by overland carrier. When a cylinder gas is used to audit the VOST system for a trial burn test, an aluminum suitcase is also sent. The aluminum suitcase contains a gas regulator, a heated glass manifold, and necessary tubing and fittings to draw the cylinder gas sample into the glass manifold. The audit gas is then drawn at atmospheric pressure from the manifold into the VOST system. A schematic of this audit gas delivery system is shown in Appendix B, Figure 1. A letter is included with the audit cylinder which gives general instructions for conducting the audit (see Appendix B). Detailed instructions are shown in Appendix B for conducting an audit of VOST (Instruction No. 3) and bag measurements (Instruction No. 1) during a hazardous waste trial burn. The audit gas concentration for each compound and cylinder gas pressure are provided to the requesting agency audit coordinator. There is no charge for the audit, except for the cost of returning the audit cylinder.

To date, 198 performance audits have been initiated; 170 are complete. The sampling and analysis methods used by auditees during performance audits are summarized in Table 3. The audit results currently available are presented in Table 4. The audit results are usually within $\pm$ 50 percent of the audit concentrations measured by RTI.

Table 3. Summary of Sampling and Analysis Methods Used During Performance Audits

Audit No.	Client*	Use of Audit Material	Measurement System Audited
1A	A	VOST method evaluation	Sampling by VOST method Analysis by GC/MS
1B	A	BAG method evaluation (RCRA testing)	Sampling by BAG Analysis by GC/FID-ECD
2A	B	VOST method evaluation	Sampling by VOST method Analysis by GC/MS
2B	B	BAG method evaluation (RCRA testing)	Sampling by BAG Analysis by GC/ECD-PID
3	C	VOST method evaluation	Sampling by VOST Analysis by GC/PID-Hall Detector
4	D	VOST method evaluation	Sampling by VOST Analysis by GC/MS
5	Region V U.S. EPA	Hazardous waste incineration trial burn analysis evaluation	Sampling by VOST Analysis by GC/MS
6	Combustion Research Facility U.S. EPA	VOST method evaluation	Sampling by VOST Analysis by GC/MS
7	E	Hazardous waste incineration burn analysis evaluation	Direct analysis by GC/ECD

(Continued)

Table 3. Summary of Sampling and Analysis Methods Used During Performance Audits (Continued)

Audit No.	Client*	Use of Audit Material	Measurement System Audited
8	F	VOST method evaluation	Sampling by VOST Anlysis by GC/MS
9	Region III U.S. EPA	Ambient air measurement method evaluation	Sampling method unknown Analysis by GC/FID
10	C	Ambient air measurement method evaluation	Sampling method unknown Analysis by GC/FID
11	B	VOST method evaluation	Sampling by VOST Analysis by GC/MS
12	B	VOST method evaluation	Sampling by VOST Analysis by GC/MS
13	E	Hazardous waste incineration trial burn anaysis evaluation	Direct analysis by GC/ECD
14	E	Hazardous waste incineration trial burn analysis evaluation	Direct analysis by GC/ECD
15	Region VI U.S. EPA	Ambient air monitoring instrument checkout	Analysis by ambient hydrocarbon analyzer
16A	G	Ambient air measurement method evaluation	Analysis by cryogenic preconcentration followed by GC/FID

(Continued)

Table 3. Summary of Sampling and Analysis Methods Used During Performance Audits (Continued)

Audit No.	Client*	Use of Audit Material	Measurement System Audited
16B	G	Ambient air measurement method evaluation	Analysis by cryogenic preconcentration followed by GC/FID
17	H	Hazardous waste incineration trial burn	Sampling by VOST Analysis by GC/MS
18A	I	Ambient air measurement method evaluation	Analysis by direct injection followed by GC/ECD
18B	I	Ambient air measurement method evaluation	Method 1 sampling by Tedlar bags and Tenax-charcoal with analysis by GC/ECD Method 2 sampling by Tenax-charcoal with analysis by GC/FID
18C	I	Ambient air measurement method evaluation	Analysis by cryogenic preconcentration followed by GC/FID
19	B	Hazardous waste incineration trial burn	Sampling by VOST Analysis by GC/MS
20	J	Hazardous waste incineration trial burn	Direct analysis by MS/MS
21	K	Hazardous waste incineration trial burn	Sampling method unknown Analysis by GC/ECD or FID

(Continued)

Table 3. Summary of Sampling and Analysis Methods Used During Performance Audits (Continued)

Audit No.	Client*	Use of Audit Material	Measurement System Audited
22	L	Hazardous waste incineration trial burn	Sampling by VOST Analysis by GC/MS
23	M	Ambient air measurement method evaluation	Sampling method unknown Analysis by GC/FID/ECD/PID/Hall detectors
24	G	Ambient air measurement method evaluation	Analysis by cryogenic preconcentration followed by GC/FID
25	I	Ambient air measurement method evaluation	Sampling method unknown Analysis method unknown
26	N	Hazardous waste incineration trial burn	Sampling by glass bulb Analysis by GC/Hall detector
27A	I	Ambient air measurement method evaluation	Sampling into Tedlar bags followed by cryogenic preconcentration analysis by GC/ECD
27B	I	Ambient air measurement method evaluation	Sampling by Tedlar bags Analysis by direct injection into GC/ECD
27C	I	Ambient air measurement method evaluation	Method 1: sampling by Tedlar bags and Tenax trap with analysis by GC/FID Method 2: sampling by Tedlar bag with analysis by direct injection into GC/ECD

(Continued)

Table 3. Summary of Sampling and Analysis Methods Used During Performance Audits (Continued)

Audit No.	Client*	Use of Audit Material	Measurement System Audited
28	O	Hazardous waste incineration trial burn	Sampling by VOST Analysis by GC/MS
29	B	Hazardous waste incineration sampling method evaluation	Sampling by VOST Analysis by GC/MS
30A	P	Ambient air measurement method evaluation	Sampling method unknown Analysis by GC/ECD
30B	P	Ambient air measurement method evaluation	Sampling method unknown Analysis by GC/ECD
31	Q	Ambient air measurement method evaluation	Sampling method unknown Analysis method unknown
32	B	Hazardous waste incineration sampling method evaluation	Sampling by VOST Analysis by GC/MS
33	B	Hazardous waste incineration sampling method evaluation	Sampling by VOST Analysis by GC/MS
34	R	Ambient air measurement method evaluation	Sampling by Tenax-charcoal tubes Analysis method unknown

(Continued)

Table 3. Summary of Sampling and Analysis Methods Used During Performance Audits (Continued)

Audit No.	Client*	Use of Audit Material	Measurement System Audited
35	C	Ambient air measurement method evaluation	Sampling by Direct injection and cryotrap with Analysis by MS
36	C	Ambient air measurement method evaluation	Sampling by Direct injection and cryotrap with Analysis by MS
37	S	Hazardous waste incineration VOST method evaluation	Sampling by VOST Analysis by GC/FID
38	L	Ambient air measurement method evaluation	Direct analysis by GC/FID
39	L	Ambient air measurement method evaluation	Sampling on charcoal Analysis by GC/MS
40	T	Ambient air measurement method evaluation (hazardous waste landfill)	Sampling by Tenax loading Analysis by GC/MS
41	T	Ambient air measurement method evaluation (hazardous waste landfill)	Sampling by Tenax loading Analysis by GC/MS
42 (Lab A)	I	Ambient air measurement method evaluation	Sampling by Tedlar bags Analysis by GC/ECD/PID
42 (Lab A)	I	Ambient air measurement method evaluation	Sampling by Tedlar bags Analysis by GC/ECD/FID

(Continued)

Table 3. Summary of Sampling and Analysis Methods Used During Performance Audits (Continued)

Audit No.	Client*	Use of Audit Material	Measurement System Audited
42 (Lab B)	I	Ambient air measurement method evaluation	Sampling into Tedlar bags followed by preconcentration on Tenax-charcoal trap Analysis by GC/FID and GC/ECD
42 (Lab B)	I	Ambient air measurement method evaluation	Sampling by Tenax-charcoal trap Analysis by GC/FID and GC/ECD
42 (Lab C)	I	Ambient air measurement method evaluation	Sampling into Tedlar bags followed by cryogenic preconcentration Analysis by GC/PID
42 (Lab C)	I	Ambient air measurement method evaluation	Sampling into Tedlar bags followed by cryogenic preconcentration Analysis by GC/PID
42 (Lab D)	I	Ambient air measurement method evaluation	Sampling into Tedlar bags followed by cryogenic preconcentration Analysis by GC/ECD
42 (Lab D)	I	Ambient air measurement method evaluation	Sampling by Tedlar bags followed by cryogenic preconcentration Analysis by GC/ECD and GC/PID
43 (Lab A)	P	Ambient air measurement method evaluation	Analysis by direct injection into GC/ECD
43 (Lab A)	GG	Ambient air measurement method evaluation	Analysis by GC/ECD

(Continued)

Table 3. Summary of Sampling and Analysis Methods Used During Performance Audits (Continued)

Audit No.	Client*	Use of Audit Material	Measurement System Audited
44	U	Hazardous waste incineration trial burn	Sampling by VOST Analysis by GC/MS
45	U	Hazardous waste incineration trial burn	Sampling by VOST Analysis by GC/MS
46	V	Ambient air analysis method evaluation	Analysis by GC/MS
47	H	Hazardous waste incineration trial burn	Sampling by VOST Analysis by GC/MS
48	Region III U. S. EPA	Ambient air measurement method evaluation	Sampling by Tedlar bags Analysis by portable GC/PID
49	Region III U. S. EPA	Ambient air measurement method evaluation	Sampling by Tedlar bags Analysis by portable GC/PID
50	V	Ambient air measurement method evaluation	Analysis by cryogenic trapping followed by GC/ECD/FID
51 (Lab A)	I	Ambient air measurement at hazardous waste landfill	Sampling by Tedlar bags Analysis by GC/PID
51 (Lab B)	I	Ambient air measurement at hazardous waste landfill	Sampling by Tedlar bags Analysis by GC/PID

(Continued)

Table 3. Summary of Sampling and Analysis Methods Used During Performance Audits (Continued)

Audit No.	Client*	Use of Audit Material	Measurement System Audited
52	I	Ambient air measurement at hazardous waste landfill	Sampling by Tedlar bags Analysis by GC/PID
53	W	Hazardous waste incineration trial burn	Sampling by VOST Analysis by GC/MS
54	Region II U. S. EPA	Ambient air measurement at hazardous waste landfill	Analysis by direct injection using CI/MS/MS
55	Region II U. S. EPA	Ambient air measurement at hazardous waste landfill	Analysis by direct injection using CI/MS/MS
56	X	Ambient air analysis method evaluation	Direct analysis by portable GC/PID
57	Y	Ambient air measurement method evaluation	Sampling by Tenax cartridges Analysis by GC/FID
58	V	Ambient air analysis method evaluation	Analysis by cryogenic trapping followed by GC/FID/ECD
59	I	Ambient air measurement method evaluation at hazardous waste landfill	Direct analysis by portable GC

(Continued)

Table 3. Summary of Sampling and Analysis Methods Used During Performance Audits (Continued)

Audit No.	Client*	Use of Audit Material	Measurement System Audited
60 (Lab A)	I	Ambient air measurement at hazardous waste landfill	Sampling into Tedlar bags Analysis by GC/ECD
60 (Lab A)	I	Ambient air measurement at hazardous waste landfill	Sampling into Tedlar bag Analysis by GC/ECD
60 (Lab B)	I	Ambient air measurement at hazardous waste landfill	Sampling into Tedlar bag Analysis by GC/ECD
60 (Lab C)	I	Ambient air measurement at hazardous waste landfill	Analysis by cryogenic trapping followed by GC/PID/ECD
60 (Lab D)	I	Ambient air measurement at hazardous waste landfill	Analysis by cryogenic trapping followed by GC/ECD
61	I	Ambient air measurement at hazardous waste landfill	Direct analysis by portable GC
62	ASRL U. S. EPA	Ambient air analysis method evaluation	Direct analysis by GC/FID

(Continued)

Table 3. Summary of Sampling and Analysis Methods Used During Performance Audits (Continued)

Audit No.	Client*	Use of Audit Material	Measurement System Audited
63	JJ	Ambient air measurement at hazardous waste landfill	Direct analysis by TAGA 6000 MS/MS system
64	JJ	Ambient air measurement at hazardous waste landfill	Direct analysis by TAGA 6000 MS/MS system
65	JJ	Ambient air measurement at hazardous waste landfill	Direct analysis by TAGA 6000 MS/MS system
66	KK	Ambient air measurement at hazardous waste landfill	Direct analysis by TAGA 6000 MS/MS system
67	KK	Ambient air measurement at hazardous waste landfill	Direct analysis by TAGA 6000 MS/MS system
68	Z	Hazardous waste incineration trial burn	Sampling into Tedlar bags Analysis by GC/ECD
69	Z	Hazardous waste incineration trial burn	Sampling by VOST Analysis by GC/ECD
70	AA	Hazardous waste incineration trial burn	Sampling by VOST Analysis by GC/MS

(Continued)

Table 3. Summary of Sampling and Analysis Methods Used During Performance Audits (Continued)

Audit No.	Client*	Use of Audit Material	Measurement System Audited
71	HH	Hazardous waste incineration (boiler)	Sampling by VOST Analysis by GC/MS
72	HH	Hazardous waste incineration (boiler)	Sampling by VOST Analysis by GC/MS
73	HH	Hazardous waste incineration (boiler)	Sampling by VOST Analysis by GC/MS
74	USEPA ASRL (RTP)	Ambient air analysis method evaluation	Direct analysis by GC/FID
75	II	Ambient air measurement at hazardous waste landfill	Direct analysis by TAGA 6000 MS/MS
76	V	Ambient air analysis method evaluation	Analysis by cryogenic preconcentration followed by GC/FID/ECD
77	C	Ambient air analysis method evaluation	Analysis by cryogenic trapping followed by GC/FID
78	C	Ambient air analysis method evaluation	Analysis by cryogenic trapping followed by GC/FID

(Continued)

Table 3. Summary of Sampling and Analysis Methods Used During Performance Audits (Continued)

Audit No.	Client*	Use of Audit Material	Measurement System Audited
79	H	Hazardous waste incineration trial burn	Sampling by VOST Analysis by GC/MS
80	H	Hazardous waste incineration trial burn	Sampling by VOST Analysis by GC/MS
81	H	Hazardous waste incineration trial burn	Sampling by VOST Analysis by GC/MS
82	CC	Hazardous waste incineration trial burn	Sampling by VOST Analysis by GC/MS
83	DD	Ambient air measurement method evaluation	Sampling by Tedlar bags Analysis by GC/FID
84	DD	Ambient air measurement method evaluation	Sampling by Tedlar bags Analysis by GC/FID
85	DD	Ambient air measurement method evaluation	Sampling by VOST Analysis by GC/FID
86	EE	Hazardous waste incineration trial burn	Sampling by VOST Analysis by GC/ECD
87	FF	Ambient air measurement at hazardous waste landfill	Direct analysis by TAGA 6000 MS/MS system
88	H	Hazardous waste incineration trial burn	Sampling by VOST Analysis by GC/ECD

(Continued)

Table 3. Summary of Sampling and Analysis Methods Used During Performance Audits (Continued)

Audit No.	Client*	Use of Audit Material	Measurement System Audited
89	Z	Hazardous waste incineration trial burn	Sampling by Tedlar bag Analysis by GC/ECD
90	Z	Hazardous waste incineration trial burn	Sampling by Tedlar bag Analysis by GC/ECD
91	LL	Hazardous waste incineration trial burn	Sampling by VOST Analysis by GC/MS
92	LL	Hazardous waste incineration trial burn	Sampling by VOST Analysis by GC/MS
93	W	Hazardous waste trial burn	Sampling by VOST Analysis by GC/MS
94	H	Hazardous waste trial burn	Sampling by VOST Analysis by GC/MS
95	MM	Hazardous waste trial burn	Sampling by VOST Analysis by GC/MS
96	VV & NN	Hazardous waste trial burn	Sampling by VOST Analysis by GC/MS
97	VV & NN	Hazardous waste trial burn	Sampling by VOST Analysis by GC/MS
98	OO	Ambient air monitoring method evaluation	Sampling by cryogenic preconcentration with Analysis by GC/FID

(Continued)

Table 3. Summary of Sampling and Analysis Methods Used During Performance Audits (Continued)

Audit No.	Client*	Use of Audit Material	Measurement System Audited
99	00	Ambient air monitoring method evaluation	Sampling by cryogenic preconcentration with Analysis by GC/FID
100 (Lab A)	I	Ambient air monitoring method evaluation	Sampling by Tedlar bag Analysis by GC/PID/ECD
100 (Lab B)	I	Ambient air monitoring method evaluation	Sampling by Tedlar bag Analysis by GC/PID/ECD
100 (Lab C)	I	Ambient air monitoring method evaluation	Sampling by Tedlar bag Analysis by GC/PID/ECD
100 (Lab D)	I	Ambient air monitoring method evaluation	Sampling by Tedlar bag Analysis by GC/PID/FID/ECD
100 (Lab E)	I	Ambient air monitoring method evaluation	Sampling by Tedlar bag Analysis by GC/ECD
100 (Lab F)	I	Ambient air monitoring method evaluation	Sampling by Tedlar bag Analysis by GC/PID/ECD
100 (Lab G)	I	Ambient air monitoring method evaluation	Sampling by Tedlar bag Analysis by GC/PID/ECD
101	H	Hazardous waste trial burn	Sampling by VOST Analysis by GC/MS
102	H	Hazardous waste trial burn	Sampling by VOST Analysis by GC/MS

(Continued)

Table 3. Summary of Sampling and Analysis Methods Used During Performance Audits (Continued)

Audit No.	Client*	Use of Audit Material	Measurement System Audited
103	HH	Hazardous waste trial burn	Sampling by VOST Analysis by GC/MS
104	HH	Hazardous waste trial burn	Sampling by VOST Analysis by GC/MS
105	PP	Hazardous waste trial burn	Sampling by VOST Analysis by GC/MS
106	I	Hazardous waste landfill emissions monitoring	Sampling by Tedlar bag Analysis by GC/FID/ECD
107	HH	Hazardous waste trial burn	Sampling by Tedlar bag Analysis by GC/ECD
108	HH	Hazardous waste trial burn	Sampling by VOST Analysis by GC/MS
109	QQ	Hazardous waste trial burn	Sampling by Tedlar bag Analysis by GC/FID
110	QQ	Hazardous waste trial burn	Sampling by Tedlar bag Analysis by GC/FID
111	RR	Hazardous waste landfill emissions monitoring	Sampling by Tedlar bag Analysis by GC/Hall/PID
112	W	Hazardous waste trial burn	Sampling by VOST Analysis by GC/MS

(Continued)

Table 3. Summary of Sampling and Analysis Methods Used During Performance Audits (Continued)

Audit No.	Client*	Use of Audit Material	Measurement System Audited
113	W	Hazardous waste trial burn	Sampling by VOST Analysis by GC/MS
114	V	Ambient air monitoring method evaluation	Direct Analysis by GC/MS
115	V	Ambient air monitoring method evaluation	Direct Analysis by GC/MS
116	H	Hazardous waste trial burn	Sampling by VOST Analysis by GC/MS
117	TT	Ambient air monitoring method evaluation	Sampling by Direct injection Analysis by GC/FID/ECD
118 (Lab A-F)	I	Ambient air monitoring method evaluation	Sampling by Tedlar bag Analysis by GC/PID/FID/ECD
119	SS	Ambient air monitoring method evaluation	Sampling by Direct injection Analysis by GC/PID
120	WW	Ambient air monitoring method evaluation	Sampling by Direct injection Analysis by GC/PID
121	XX	Hazardous waste trial burn	Sampling by Tedlar bag Analysis by GC/ECD
122	XX	Hazardous waste trial burn	Sampling by Tedlar bag Analysis by GC/FID

(Continued)

Table 3. Summary of Sampling and Analysis Methods Used During Performance Audits (Continued)

Audit No.	Client*	Use of Audit Material	Measurement System Audited
123	TT	Ambient air monitoring method evaluation	Sampling by Tedlar bag Analysis by GC/FID/ECD
124	YY	Hazardous waste trial burn	Sampling by VOST Analysis by GC/MS
125	YY	Hazardous waste trial burn	Sampling by VOST Analysis by GC/MS
126	ZZ	Ambient air monitoring method evaluation	Sampling by Tenax cartridge Analysis by GC/MS
127	HH	Hazardous waste trial burn	Sampling by VOST Analysis by GC/MS
128	KK	Hazardous waste landfill emissions monitoring	Sampling by Charcoal tube, VOST Analysis by GC/MS
129	KK	Hazardous waste landfill emissions monitoring	Sampling by Charcoal tube, VOST Analysis by GC/MS
130 (Lab A-F)	I	Ambient air monitoring method evaluation	Sampling by Tedlar bag Analysis by GC/ECD/PID/FID
131	H	Hazardous waste trial burn	Sampling by Tedlar bag Analysis by GC/MS
132	W	Hazardous waste trial burn	Sampling by VOST Analysis by GC/MS

(Continued)

Table 3. Summary of Sampling and Analysis Methods Used During Performance Audits (Continued)

Audit No.	Client*	Use of Audit Material	Measurement System Audited
133	RR	Hazardous waste landfill emissions monitoring	Sampling by Tedlar bag Analysis by GC/Hall/PID
134	UU	Ambient air monitoring method evaluation	Sampling by Tenax cartridge Analysis by GC/FID/ECD/PID
135	UU	Ambient air monitoring method evaluation	Sampling by Tenax cartridge Analysis by GC/FID/ECD/PID
136	UU	Ambient air monitoring method evaluation	Sampling by Tenax cartridge Analysis by GC/FID/ECD/PID
137	O	Hazardous waste trial burn	Sampling by VOST Analysis by GC/MS
138	O	Hazardous waste trial burn	Sampling by VOST Analysis by GC/MS
139	HH	Hazardous waste trial burn	Sampling by VOST Analysis by GC/MS
140	Region VII	Ambient air monitoring method evaluation	Sampling by Cryogenic trap Analysis by GC/FID
141	Region VII	Ambient air monitoring method evaluation	Sampling by Cryogenic trap Analysis by GC/FID
142	Q	Hazardous waste trial burn	Sampling by VOST Analysis by GC/MS

(Continued)

Table 3. Summary of Sampling and Analysis Methods Used During Performance Audits (Continued)

Audit No.	Client*	Use of Audit Material	Measurement System Audited
143	AC	Hazardous waste trial burn	Sampling by VOST Analysis by GC/MS
144	VV	Hazardous waste trial burn	Sampling by VOST Analysis by GC/MS
145	VV	Hazardous waste trial burn	Sampling by VOST Analysis by GC/MS
146	AE	Ambient air monitoring method evaluation	Sampling by Tedlar bag Analysis by colorimetric method
147	AE	Ambient air monitoring method evaluation	Sampling by Tedlar bag Analysis by colorimetric method
148	AE	Ambient air monitoring method evaluation	Sampling by Tedlar bag Analysis by colorimetric method
149	A	Hazardous waste trial burn	Sampling by VOST Analysis by GC/MS
150	A	Hazardous waste trial burn	Sampling by VOST Analysis by GC/MS
151	AH	Ambient air monitoring method evaluation	Sampling by Direct injection Analysis by TAGA MS/MS
152	AH	Ambient air monitoring method evaluation	Sampling by Direct injection Analysis by TAGA MS/MS

(Continued)

Table 3. Summary of Sampling and Analysis Methods Used During Performance Audits (Continued)

Audit No.	Client*	Use of Audit Material	Measurement System Audited
153	HH	Hazardous waste trial burn	Sampling by VOST Analysis by GC/MS
154	HH	Hazardous waste trial burn	Sampling by VOST Analysis by GC/MS
155	AI	Ambient air monitoring method evaluation	Sampling by Tenax/carbon molecular sieve with Analysis by GC/MS
156	AI	Ambient air monitoring method evaluation	Sampling by Tenax/carbon molecular sieve with Analysis by GC/MS
157	AI	Ambient air monitoring method evaluation	Sampling by Tenax/carbon molecular sieve with Analysis by GC/MS
158	X	Ambient air monitoring method evaluation	Sampling by Direct injection Analysis by GC/PID
159	AF	Hazardous waste trial burn	Sampling by VOST Analysis by GC/MS
160	AJ	Hazardous waste trial burn	Sampling by VOST Analysis by GC/MS
161	AG	Hazardous waste trial burn	Sampling by VOST Analysis by GC/MS
162	AG	Hazardous waste trial burn	Sampling by VOST Analysis by GC/MS

(Continued)

Table 3. Summary of Sampling and Analysis Methods Used During Performance Audits (Continued)

Audit No.	Client*	Use of Audit Material	Measurement System Audited
163	HH	Hazardous waste landfill emissions monitoring	Sampling by Tenax/canister Analysis by GC/MS
164	HH	Hazardous waste landfill emissions monitoring	Sampling by Tenax/canister Analysis by GC/MS
165 (Lab A-E)	I	Ambient air monitoring method evaluation	Sampling by Tedlar bag Analysis by GC/PID/ECD/FID
166	USEPA-ERT Edison, NJ	Ambient air monitoring method evaluation	Sampling by Tedlar bag Analysis by GC/FID
167	USEPA-ERT Edison, NJ	Ambient air monitoring method evaluation	Sampling by Tedlar bag Analysis by GC/FID
168	USEPA-ERT Edison, NJ	Ambient air monitoring method evaluation	Sampling by Tedlar bag Analysis by GC/FID
169	USEPA-ERT Edison, NJ	Ambient air monitoring method evaluation	Sampling by Tedlar bag Analysis by GC/FID
170	AK	Hazardous waste trial burn	Sampling by Direct injection Analysis by GC/ECD
171	AK	Hazardous waste trial burn	Sampling by Direct injection Analysis by GC/ECD
172	AL	Ambient air monitoring method evaluation	Sampling by Tedlar bag Analysis by GC/MS

(Continued)

Table 3. Summary of Sampling and Analysis Methods Used During Performance Audits (Continued)

Audit No.	Client*	Use of Audit Material	Measurement System Audited
173	AL	Ambient air monitoring method evaluation	Sampling by Tedlar bag Analysis by GC/MS
174	AL	Ambient air monitoring method evaluation	Sampling by Tedlar bag Analysis by GC/MS
175	I	Ambient air monitoring method evaluation	Sampling by Tedlar bag Analysis by GC/PID/Hall detector
176	I	Ambient air monitoring method evaluation	Sampling by Tedlar bag Analysis by GC/PID/Hall detector
177	I	Ambient air monitoring method evaluation	Sampling by Tedlar bag Analysis by GC/PID/Hall detector
178	AM	Hazardous waste trial burn	Sampling by Tedlar bag Analysis by GC/MS
179	AM	Hazardous waste trial burn	Sampling by Tedlar bag Analysis by GC/MS
180	QQ	Hazardous waste trial burn	Sampling by VOST Analysis by GC/MS
181	W	Hazardous waste trial burn	Sampling by VOST Analysis by GC/MS
182	RR	Hazardous waste landfill emissions monitoring	Sampling by Tedlar bag Analysis by GC/PID/Hall detector

(Continued)

Table 3. Summary of Sampling and Analysis Methods Used During Performance Audits (Continued)

Audit No.	Client*	Use of Audit Material	Measurement System Audited
183	HH	Hazardous waste landfill emissions monitoring	Sampling by Tenax/canister Analysis by GC/MS
184	A	Hazardous waste trial burn	Sampling by VOST Analysis by GC/MS
185	O	Hazardous waste trial burn	Sampling by VOST Analysis by GC/MS
186	O	Hazardous waste trial burn	Sampling by VOST Analysis by GC/MS
187	A	Ambient air monitoring method evaluation	Sampling by cryogenic trap Analysis by GC/FID/ECD/PID
188	QQ	Hazardous waste trial burn	Sampling by VOST Analysis by GC/MS
189	AN	Hazardous waste trial burn	Sampling by VOST Analysis by GC/MS
190	AN	Hazardous waste trial burn	Sampling by VOST Analysis by GC/MS
191	JJ	Hazardous waste landfill emission measurements	Sampling by direct injection Analysis by GC/MS

(Continued)

Table 3. Summary of Sampling and Analysis Methods Used During Performance Audits (Continued)

Audit No.	Client*	Use of Audit Material	Measurement System Audited
192	JJ	Hazardous waste landfill emissions monitoring	Sampling by direct injection Analysis by GC/MS
193	KK	Hazardous waste landfill emissions monitoring	Sampling by stainless steel canister Analysis by GC/MS
194	KK	Hazardous waste landfill emissions monitoring	Sampling by stainless steel canister Analysis by GC/MS
195	I	Ambient air monitoring method evaluation	Sampling by tedlar bag Analysis by GC/PID/Hall Detector
196	A	Ambient air monitoring method evaluation	Sampling Method 1: Tenax cartidge Sampling Method 2: Carbosive/ carbotrap in series Anlaysis, both GC/MS
197	A	Ambient air monitoring method evaluation	Sampling by Tenax Cartridge Analysis by GC/MS
198	AD	Hazardous waste trial burn	Sampling by VOST Analysis by GC/MS

*Whenever the auditee is known, an alphabetical letter is shown. Whenever the auditee is unknown, the name of the agency requesting the audit is shown.

Table 4. Summary of Performance Audit Results

Audit No.	Client***	Use of Audit Material	Audit Material	RTI Audit Conc. (ppb)	Client Audit % Bias (avg.)*	Status of Audit**
1A	A	VOST method evaluation	Carbon Tetrachloride	21.0 ± 1.0	-50	B
			Chloroform	23.0 ± 1.0	0	
			Perchloroethylene	29.0 ± 2.0	+17	
			Benzene	18.0 ± 1.0	+31	
			Vinyl Chloride	31.0 ± 1.0	-50	
1B	A	BAG method evaluation (RCRA Testing)	Carbon Tetrachloride	141 ± 3.0	+60	B
			Chloroform	120 ± 3.0	+34	
			Perchloroethylene	126 ± 3.0	+31	
			Benzene	133 ± 3.0	+18	
			Vinyl Chloride	154 ± 3.0	-33	
2A	B	VOST method evaluation	Carbon Tetrachloride	21.0 ± 1.0	+27	B
			Chloroform	23.0 ± 1.0	+28	
			Perchloroethylene	29.0 ± 2.0	+34	
			Benzene	18.0 ± 1.0	+32	
			Vinyl Chloride	31.0 ± 1.0	-66	
2B	B	BAG method evaluation (RCRA Testing)	Carbon Tetrachloride	141 ± 3.0	-13	B
			Chloroform	120 ± 3.0	-16	
			Perchloroethylene	126 ± 3.0	-44	
			Benzene	133 ± 3.0	-27	
			Vinyl Chloride	154 ± 3.0	-34	
3	C	VOST method evaluation	Carbon Tetrachloride	21.0 ± 1.0	+10	B
			Chloroform	23.0 ± 1.0	+20	
			Benzene	18.0 ± 1.0	-9	

(Continued)

Table 4. Summary of Performance Audit Results (Continued)

Audit No.	Client***	Use of Audit Material	Audit Material	RTI Audit Conc. (ppb)	Client Audit % Bias (avg.)*	Status of Audit**
4	D	VOST method evaluation	Carbon Tetrachloride	21.0 ± 1.0	-14	B
			Chloroform	23.0 ± 1.0	-20	
			Perchloroethylene	29.0 ± 2.0	+17	
			Benzene	18.0 ± 1.0	+6	
			Vinyl Chloride	31.0 ± 1.0	-10	
5	Region V U.S. EPA	Hazardous waste incineration trial burn analysis evaluation	Carbon Tetrachloride	11.0 ± 0.3	-31	B
			Chloroform	45.0 ± 0.9	+200	
			Vinyl Chloride	20.5 ± 0.7	+7	
6	Combustion Research Facility U.S. EPA	VOST method evaluation	Carbon Tetrachloride	9.9 ± 0.3	+22	B
			Chloroform	42.0 ± 0.9	0	
			Perchloroethylene	9.6 ± 0.2	+40	
			Benzene	20.0 ± 0.6	+3	
7	E	Hazardous waste incineration burn analysis evaluation	Carbon Tetrachloride	11.8 ± 0.4	-3	B
			Chloroform	10.5 ± 0.2	+86	
8	F	VOST method evaluation	Carbon Tetrachloride	21.0 ± 1.0	NA	C
			Chloroform	23.0 ± 1.0	NA	
			Perchloroethylene	29.0 ± 2.0	NA	
			Benzene	18.0 ± 1.0	NA	
			Vinyl Chloride	31.0 ± 1.0	NA	

(Continued)

Table 4. Summary of Performance Audit Results (Continued)

Audit No.	Client***	Use of Audit Material	Audit Material	RTI Audit Conc. (ppb)	Client Audit % Bias (avg.)*	Status of Audit**
9	Region III U.S. EPA	Ambient air measurement method evaluation	Carbon Tetrachloride	9.3 ± 0.3	NA	C
			Chloroform	40.0 ± 0.8	NA	
			Perchloroethylene	9.4 ± 0.2	NA	
			Benzene	20.0 ± 0.6	NA	
			Vinyl Chloride	19.0 ± 0.6	NA	
10	C	Ambient measurement method evaluation	Carbon Tetrachloride	323 ± 9.7	+6	B
			Chloroform	128 ± 2.7	+4	
			Perchloroethylene	119 ± 2.9	-3	
			Benzene	379 ± 12.1	-2	
			Vinyl Chloride	403 ± 12.1	-3	
11	B	VOST method evaluation	Carbon Tetrachloride	11.0 ± 0.3	+5	B
			Chloroform	47.4 ± 1.0	+3	
			Perchloroethylene	11.3 ± 0.3	+5	
			Benzene	25.2 ± 0.8	-7	
			Vinyl Chloride	19.8 ± 0.6	-85	
12	B	VOST method evaluation	Carbon Tetrachloride	6.6 ± 0.2	+21	B
			Chloroform	7.4 ± 0.2	+12	
			Perchloroethylene	21.9 ± 0.5	+56	
			Benzene	26.0 ± 0.8	+47	
			Vinyl Chloride	29.6 ± 0.9	-52	
13	E	Hazardous waste incineration trial burn analysis evaluation	Carbon Tetrachloride	11.6 ± 0.4	+11	B
			Chloroform	10.2 ± 0.2	+100	

(Continued)

Table 4. Summary of Performance Audit Results (Continued)

Audit No.	Client***	Use of Audit Material	Audit Material	RTI Audit Conc. (ppb)	Client Audit % Bias (avg.)*	Status of Audit**
14	E	Hazardous waste incineration trial burn analysis evaluation	Carbon Tetrachloride Chloroform	24.0 ± 0.7 16.0 ± 0.3	-25 +31	B
15	Region V U.S. EPA	Ambient air monitoring instrument checkout****	Carbon Tetrachloride Chloroform Perchloroethylene Benzene	11.0 ± 0.3 47.4 ± 1.0 11.3 ± 0.3 25.2 ± 0.8	-45 +58 -68 -56	B
16A	G	Ambient air measurement method evaluation	Carbon Tetrachloride Chloroform Perchloroethylene Benzene Vinyl Chloride	13.4 ± 0.4 12.4 ± 0.3 75.6 ± 1.8 51.2 ± 1.6 29.6 ± 0.9	+1 +5 +18 -9 +7	B
16B	G	Ambient air measurement method evaluation	Carbon Tetrachloride Chloroform Perchloroethylene Benzene Vinyl Chloride	13.4 ± 0.4 12.4 ± 0.3 75.6 ± 1.8 51.2 ± 1.6 29.6 ± 0.9	+98 +140 +13 -8 +6	B
17	H	Hazardous waste incineration trial burn	Carbon Tetrachloride Chloroform Perchloroethylene Benzene Vinyl Chloride	9.9 ± 0.3 42.0 ± 0.9 9.6 ± 0.2 20.0 ± 0.6 19.8 ± 0.6	-19 -32 -14 -21 -41	B

(Continued)

Table 4. Summary of Performance Audit Results (Continued)

Audit No.	Client***	Use of Audit Material	Audit Material	RTI Audit Conc. (ppb)	Client Audit % Bias (avg.)*	Status of Audit**
18A	I	Ambient air measurement method evaluation	Carbon Tetrachloride	132 ± 4.0	-17	B
			Chloroform	129 ± 2.7	+16	
			Perchloroethylene	136 ± 3.3	+18	
18A	I	Ambient air measurement method evaluation	Carbon Tetrachloride	9.5 ± 0.3	-23	B
			Chloroform	40.6 ± 0.9	+1	
			Perchloroethylene	9.5 ± 0.2	+16	
18B	I	Ambient air measurement method evaluation	Carbon Tetrachloride	132 ± 4.0	+38	B
			Chloroform	129 ± 2.7	+27	
			Perchloroethylene	136 ± 3.3	+34	
			Benzene	146 ± 4.7	+11	
			Vinyl Chloride	153 ± 4.9	-5	
18B	I	Ambient air measurement method evaluation	Carbon Tetrachloride	9.5 ± 0.3	+58	B
			Chloroform	40.6 ± 0.9	+35	
			Perchloroethylene	9.5 ± 0.2	+332	
			Benzene	19.4 ± 0.6	+240	
			Vinyl Chloride	20.6 ± 0.7	-3	
18C	I	Ambient air measurement method evaluation	Carbon Tetrachloride	132 ± 4.0	NA	C
			Chloroform	129 ± 2.7	NA	
			Perchloroethylene	136 ± 3.3	NA	
			Benzene	146 ± 4.7	NA	
			Vinyl Chloride	153 ± 4.9	NA	

(Continued)

Table 4. Summary of Performance Audit Results (Continued)

Audit No.	Client***	Use of Audit Material	Audit Material	RTI Audit Conc. (ppb)	Client Audit % Bias (avg.)*	Status of Audit**
18C	I	Ambient air measurement method evaluation	Benzene	19.4 ± 0.6	-2	B
19	B	Hazardous waste incineration trial burn	Carbon Tetrachloride	11.6 ± 0.3	+28	B
20	J	Hazardous waste incineration trial burn	Carbon Tetrachloride	11.6 ± 0.3	NA	C
			Chloroform	10.2 ± 0.2	NA	
			Perchloroethylene	67.7 ± 1.6	NA	
			Benzene	45.2 ± 1.4	NA	
			Vinyl Chloride	29.8 ± 1.0	NA	
21	K	Hazardous waste incineration trial burn	Carbon Tetrachloride	10.8 ± 0.3	NA	C
			Chloroform	47.1 ± 1.0	NA	
			Perchloroethylene	10.3 ± 0.2	NA	
			Benzene	23.2 ± 0.7	NA	
			Vinyl Chloride	20.1 ± 0.6	NA	
22	L	Hazardous waste incineration trial burn	Carbon Tetrachloride	12.7 ± 0.4	-21	B
			Chloroform	12.3 ± 0.3	-27	
			Perchloroethylene	62.2 ± 1.5	-44	
			Benzene	48.0 ± 1.5	-63	
			Vinyl Chloride	31.3 ± 1.0	-81	

(Continued)

Table 4. Summary of Performance Audit Results (Continued)

Audit No.	Client***	Use of Audit Material	Audit Material	RTI Audit Conc. (ppb)	Client Audit % Bias (avg.)*	Status of Audit**
23	M	Ambient air measurement method evaluation	Carbon Tetrachloride	15.7 ± 0.5	-5	B
			Chloroform	15.2 ± 0.3	+5	
			Perchloroethylene	15.7 ± 0.4	+2	
			Benzene	18.2 ± 0.6	-12	
			Vinyl Chloride	15.4 ± 0.5	-29	
24	G	Ambient air measurement method evaluation	Methyl Ethyl Ketone	19.4 ± 1.1	+18	B
			Trichloroethylene	14.7 ± 0.7	+16	
			1,2-Dichloroethane	14.4 ± 0.7	+164	
			1,1,1-Trichloroethane	14.5 ± 0.7	+110	
25	I	Ambient air measurement method evaluation	Carbon Tetrachloride	7.1 ± 0.2	-16	B
			Chloroform	8.1 ± 0.2	-26	
			Perchloroethylene	21.1 ± 0.5	+4	
			Benzene	29.9 ± 1.0	-20	
			Vinyl Chloride	32.0 ± 1.0	-31	
26	N	Hazardous waste incineration trial burn	Trichlorofluoromethane	15.4 ± 0.5	-42	B
			Dichlorodifluoromethane	16.6 ± 0.7	-10	

(Continued)

Table 4. Summary of Performance Audit Results (Continued)

Audit No.	Client***	Use of Audit Material	Audit Material	RTI Audit Conc. (ppb)	Client Audit % Bias (avg.)*	Status of Audit**
27A	I	Ambient air measurement method evaluation	Trichloroethylene	145 ± 7	+17	B
			1,2-Dichloroethane	157 ± 8	-5	
			1,2-Dibromoethane	196 ± 8	+63	
27A	I	Ambient air measurement method evaluation	Trichloroethylene	15.1 ± 0.7	+10	B
			1,2-Dichloroethane	14.7 ± 0.7	+54	
			1,2-Dibromoethane	16.8 ± 0.7	+16	
			1,1,1-Trichloroethane	14.8 ± 0.7	+19	
27B	I	Ambient air measurement method evaluation	Trichloroethylene	145 ± 7	-30	B
			Trichlorofluoromethane	155 ± 5	-3	
			Dichlorodifluoromethane	170 ± 7	-75	
			1,2-Dibromoethane	196 ± 8	-52	
27B	I	Ambient air measurement method evaluation	Trichloroethylene	15.1 ± 0.7	-52	B
			1,2-Dichloroethane	14.7 ± 0.7	-93	
			Trichlorofluoromethane	15.5 ± 0.5	-16	
			Dichlorodifluoromethane	16.7 ± 0.7	-71	
			1,2-Dibromoethane	16.8 ± 0.7	-73	
			1,1,1-Trichloroethane	14.8 ± 0.7	-16	
27C	I	Ambient air measurement method evaluation	Methyl Ethyl Ketone	170 ± 9	+2	B
			Trichloroethylene	145 ± 7	+36	
			Trichlorofluoromethane	155 ± 5	-63	
			Dichlorodifluoromethane	170 ± 7	-2	

(Continued)

Table 4. Summary of Performance Audit Results (Continued)

Audit No.	Client***	Use of Audit Material	Audit Material	RTI Audit Conc. (ppb)	Client Audit % Bias (avg.)*	Status of Audit**
27C	I	Ambient air measurement method evaluation	Methyl Ethyl Ketone	8.5 ± 0.5	+124	B
			Trichloroethylene	15.1 ± 0.7	-1	
			Trichlorofluoromethane	15.5 ± 0.5	+158	
			Dichlorodifluoromethane	16.7 ± 0.7	+8	
			1,1,1-Trichloroethane	14.8 ± 0.7	+42	
28	O	Hazardous waste incineration trial burn	Carbon Tetrachloride	9.5 ± 0.3	+22	B
			Chloroform	40.6 ± 0.9	+9	
			Perchloroethylene	9.5 ± 0.2	+16	
			Benzene	19.4 ± 0.6	+17	
			Vinyl Chloride	20.6 ± 0.7	-13	
29	B	Hazardous waste incineration sampling method evaluation	Carbon Tetrachloride	11.4 ± 0.3	+5	B
			Chloroform	43.9 ± 0.9	+8	
			Perchloroethylene	10.3 ± 0.2	+20	
			Benzene	19.9 ± 0.6	+23	
30A	P	Ambient air measurement method evaluation	Trichloroethylene	15.1 ± 0.7	+12	B
30B	P	Ambient air measurement method evaluation	Trichloroethylene	15.1 ± 0.7	+70	B

(Continued)

Table 4. Summary of Performance Audit Results (Continued)

Audit No.	Client***	Use of Audit Material	Audit Material	RTI Audit Conc. (ppb)	Client Audit % Bias (avg.)*	Status of Audit**
31	Q	Ambient air measurenent method evaluation	Carbon Tetrachloride	299 ± 9.0	-56	B
			Chloroform	126 ± 2.6	-33	
			Perchloroethylene	103 ± 2.5	-60	
			Benzene	378 ± 12.1	+18	
32	B	Hazardous waste incineration sampling method evaluation	Carbon Tetrachloride	9.6 ± 0.3	-1	B
			Chloroform	37.1 ± 0.8	+11	
			Perchloroethylene	9.1 ± 0.2	-18	
			Benzene	19.4 ± 0.6	+7	
33	B	Hazardous waste incineration sampling method evaluation	Carbon Tetrachloride	37.7 ± 1.1	-25	B
			Chloroform	8.3 ± 0.2	-24	
			Perchloroethylene	8.4 ± 0.2	-17	
			Benzene	40.7 ± 1.3	-26	
34	R	Ambient air measurement method evaluation	Carbon Tetrachloride	9.6 ± 0.3	NA	C
			Chloroform	37.1 ± 0.8	NA	
			Perchloroethylene	9.1 ± 0.2	NA	
			Benzene	19.4 ± 0.6	NA	
			Vinyl Chloride	20.4 ± 0.7	NA	
35	C	Ambient air measurement method evaluation	Chloroform	43.9 ± 0.9	+25	B
			Perchloroethylene	10.3 ± 0.2	+25	
			Benzene	19.9 ± 0.6	+25	

(Continued)

Table 4. Summary of Performance Audit Results (Continued)

Audit No.	Client***	Use of Audit Material	Audit Material	RTI Audit Conc. (ppb)	Client Audit % Bias (avg.)*	Status of Audit**
36	C	Ambient air measurement method evaluation	Trichloroethylene	15.1 ± 0.7	+20	B
			1,1,1-Trichloroethane	14.8 ± 0.7	+29	
37	S	Hazardous waste incineration VOST method evaluation	Acetonitrile	7.9 ± 0.6	+377	B
			Trichloroethylene	9.0 ± 0.4	+39	
			Trichlorofluoromethane	9.4 ± 0.3	+3	
			1,2-Dibromoethane	10.2 ± 0.4	+1	
			1,1,1-Trichloroethane	10.1 ± 0.5	+7	
38	L	Ambient air monitoring measurement method evaluation	Carbon Tetrachloride	386.2 ± 2.6	-100	B
			Chloroform	331.0 ± 7.0	-96	
			Perchloroethylene	107.0 ± 7.4	-40	
			Benzene	137.0 ± 4.4	+13	
			Vinyl Chloride	150.0 ± 4.8	-39	
39	L	Ambient air measurement method evaluation	Acetonitrile	106 ± 7	-100	B
			Methyl Ethyl Ketone	123 ± 7	-65	
			Trichloroethylene	142 ± 7	-67	
			1,2-Dichloroethane	139 ± 7	-17	
			Trichlorofluoromethane	161 ± 6	+248	
			Bromomethane	168 ± 7	-100	
			Dichlorodifluoromethane	170 ± 7	-79	
			1,2-Dibromoethane	192 ± 8	-86	

(Continued)

Table 4. Summary of Performance Audit Results (Continued)

Audit No.	Client***	Use of Audit Material	Audit Material	RTI Audit Conc. (ppb)	Client Audit % Bias (avg.)*	Status of Audit**
40	T	Ambient air measurement method evaluation (hazardous waste landfill)	Carbon Tetrachloride	11.4 ± 0.3	-29	B
			Chloroform	43.9 ± 0.9	-14	
			Perchloroethylene	10.3 ± 0.2	-15	
			Benzene	19.9 ± 0.6	-5	
41	T	Ambient air measurement method evaluation (hazardous waste landfill)	Trichloroethylene	15.1 ± 0.7	-7	B
			1,2-Dichloroethane	14.7 ± 0.7	-2	
			1,1,1-Trichloroethane	14.8 ± 0.7	-3	
42 (Lab A)	I	Ambient air measurement method evaluation	Carbon Tetrachloride	9.5 ± 0.3	+16	B
			Chloroform	37.3 ± 0.8	-4	
			Perchloroethylene	10.0 ± 0.2	0	
			Benzene	19.7 ± 0.6	-19	
			Vinyl Chloride	20.6 ± 0.7	-13	
42 (Lab A)	I	Ambient air measurement method evaluation	Carbon Tetrachloride	14.5 ± 0.4	+10	B
			Chloroform	3.7 ± 0.1	+8	
			Perchloroethylene	14.2 ± 0.3	+6	
			Benzene	12.2 ± 0.4	-10	
			Vinyl Chloride	11.6 ± 0.4	-22	
42 (Lab B)	I	Ambient air measurement method evaluation	Carbon Tetrachloride	9.5 ± 0.3	-5	B
			Chloroform	37.3 ± 0.8	+2	
			Perchloroethylene	10.2 ± 0.2	-20	
			Benzene	19.7 ± 0.6	-9	
			Vinyl Chloride	20.6 ± 0.7	-8	

(Continued)

Table 4. Summary of Performance Audit Results (Continued)

Audit No.	Client***	Use of Audit Material	Audit Material	RTI Audit Conc. (ppb)	Client Audit % Bias (avg.)*	Status of Audit**
42 (Lab B)	I	Ambient air measurement method evaluation	Carbon Tetrachloride	14.5 ± 0.4	-17	B
			Chloroform	3.7 ± 0.1	-14	
			Perchloroethylene	14.2 ± 0.3	-15	
			Benzene	12.2 ± 0.4	-10	
			Vinyl Chloride	11.6 ± 0.4	-5	
42 (Lab C)	I	Ambient air measurement method evaluation	Benzene	19.7 ± 0.6	-9	B
42 (Lab C)	I	Ambient air measurement method evaluation	Benzene	12.2 ± 0.4	-18	B
42 (Lab D)	I	Ambient air measurement method evaluation	Carbon Tetrachloride	9.5 ± 0.3	+47	B
			Chloroform	37.3 ± 0.8	+18	
			Perchloroethylene	10.0 ± 0.2	+50	
			Benzene	19.7 ± 0.6	+2	
42 (Lab D)	I	Ambient air measurement method evaluation	Carbon Tetrachloride	14.5 ± 0.4	+52	B
			Chloroform	3.7 ± 0.1	-5	
			Perchloroethylene	14.2 ± 0.3	+34	
			Benzene	12.2 ± 0.4	-2	
43A	P	Ambient air measurement method evaluation	Trichloroethylene	142 ± 7.0	+1	B
43B	P	Ambient air measurement method evaluation	Trichloroethylene	142 ± 7.0	+44	B

(Continued)

Table 4. Summary of Performance Audit Results (Continued)

Audit No.	Client***	Use of Audit Material	Audit Material	RTI Audit Conc. (ppb)	Client Audit % Bias (avg.)*	Status of Audit**
44	U	Hazardous waste incineration trial burn	Carbon Tetrachloride	11.4 ± 0.3	-68	B
			Chloroform	43.9 ± 0.9	-25	
			Perchloroethylene	10.3 ± 0.2	+8	
			Benzene	19.9 ± 0.6	-20	
45	U	Hazardous waste incineration trial burn	Acetonitrile	13.8 ± 1.0	NA	C
			Methyl Ethyl Ketone	8.5 ± 0.5	NA	
			Trichloroethylene	15.1 ± 0.7	NA	
			1,2-Dichloroethane	14.7 ± 0.7	NA	
			Trichlorofluoromethane	15.5 ± 0.5	NA	
			Bromomethane	15.4 ± 0.6	NA	
			Dichlorodifluoromethane	16.7 ± 0.7	NA	
			1,2-Dibromoethane	16.8 ± 0.7	NA	
			1,1,1-Trichloroethane	14.8 ± 0.7	NA	
46	V	Ambient air analysis method evaluation	Perchloroethylene	21.1 ± 0.5	+118	B
			Benzene	25.9 ± 0.8	+8	
47	H	Hazardous waste incineration trial burn	Toluene	12.1	NA	C
48	EPA Region III Annapolis, MD	Ambient air measurement method evaluation	Chloroform	9.5 ± 0.3	-54	B
			Perchloroethylene	10.0 ± 0.2	+60	
			Benzene	19.7 ± 0.6	+42	
			Vinyl Chloride	20.6 ± 0.7	+70	

(Continued)

Table 4. Summary of Performance Audit Results (Continued)

Audit No.	Client***	Use of Audit Material	Audit Material	RTI Audit Conc. (ppb)	Client Audit % Bias (avg.)*	Status of Audit**
49	EPA Region III Annapolis, MD	Ambient air measurement method evaluation	Trichloroethylene 1,1,1-Trichloroethane	14.2 ± 0.7 13.3 ± 0.7	+13 -10	B
50	V	Ambient air measurement method evaluation	Carbon Tetrachloride Chloroform Perchloroethylene Benzene Vinyl Chloride	9.6 ± 0.3 37.1 ± 0.8 9.1 ± 0.2 19.4 ± 0.6 20.4 ± 0.7	-5 +4 +1 +2 -2	B
51 (Lab A)	I	Ambient air measurement at hazardous waste landfill	Benzene	18.6 ± 0.6	+24	B
51 (Lab A)	I	Ambient air measurement at hazardous waste landfill	Benzene Vinyl Chloride	44.2 ± 1.4 48.5 ± 1.6	+6 +65	B
51 (Lab B)	I	Ambient air measurement at hazardous waste landfill	Vinyl Chloride	48.5 ± 1.6	-1	B
52	I	Ambient air measurement at hazardous waste landfill	Benzene Vinyl Chloride	44.2 ± 1.4 48.5 ± 1.6	NA NA	C
53	W	Hazardous waste incineration trial burn	Carbon Tetrachloride	12.3 ± 0.4	+24	B

(Continued)

Table 4. Summary of Performance Audit Results (Continued)

Audit No.	Client***	Use of Audit Material	Audit Material	RTI Audit Conc. (ppb)	Client Audit % Bias (avg.)*	Status of Audit**
54	Region II U.S. EPA	Ambient air measurement at hazardous waste landfill	Carbon Tetrachloride	46.0 ± 1.4	NA	C
			Chloroform	10.3 ± 0.2	NA	
			Perchloroethylene	10.7 ± 0.3	NA	
			Benzene	49.0 ± 1.6	NA	
			Vinyl Chloride	50.1 ± 1.6	NA	
55	Region II U.S. EPA	Ambient air measurement at hazardous waste landfill	Acetonitrile	24.2 ± 1.7	NA	C
			Methyl Ethyl Ketone	29.0 ± 1.6	NA	
			Trichlorofluoromethane	29.5 ± 1.0	NA	
			Bromomethane	31.4 ± 1.2	NA	
			Dichlorodifluoromethane	29.4 ± 1.2	NA	
			1,2 Dibromoethane	32.6 ± 1.3	NA	
			1,1,1-Trichloroethane	27.7 ± 1.4	NA	
56	X	Ambient air analysis method evaluation	Vinyl Chloride	50.3 ± 1.6	-1	B
57	Y	Ambient air measurement method evaluation	Carbon Tetrachloride	12.0 ± 0.4	NA	C
			Chloroform	12.0 ± 0.3	NA	
			Perchloroethylene	64.3 ± 1.5	NA	
			Benzene	44.7 ± 1.4	NA	
			Vinyl Chloride	29.0 ± 0.9	NA	

(Continued)

Table 4. Summary of Performance Audit Results (Continued)

Audit No.	Client***	Use of Audit Material	Audit Material	RTI Audit Conc. (ppb)	Client Audit % Bias (avg.)*	Status of Audit**
58	V	Ambient air analysis method evaluation	Carbon Tetrachloride	9.6 ± 0.3	-5	B
			Chloroform	37.1 ± 0.8	+4	
			Perchloroethylene	9.1 ± 0.2	+1	
			Benzene	19.4 ± 0.6	+2	
			Vinyl Chloride	20.4 ± 0.7	-2	
59	I	Ambient air measurement at hazardous waste landfill	Carbon Tetrachloride	15.4 ± 0.5	NA	C
			Chloroform	14.8 ± 0.3	NA	
			Perchloroethylene	15.9 ± 0.4	NA	
			Benzene	16.9 ± 0.5	NA	
			Vinyl Chloride	15.4 ± 0.5	NA	
60A (Method 1)	I	Ambient air measurement at hazardous waste landfill	Trichloroethylene	9.5 ± 0.5	+10	B
			1,2-Dichloroethane	8.5 ± 0.4	+34	
			1,2 Dibromoethane	8.5 ± 0.3	+14	
			1,1,1-Trichloroethane	9.4 ± 0.5	+10	
60A (Method 2)	I	Ambient air measurement at hazardous waste land-	Trichloroethylene	9.5 ± 0.5	+6	B
			1,2 Dichloroethane	8.5 ± 0.4	+35	
			1,1,1-Trichloroethane	9.4 ± 0.5	+10	
60B	I	Ambient air measurement at hazardous waste landfill	Trichloroethylene	9.5 ± 0.5	+58	B
			1,2-Dichloroethane	8.5 ± 0.4	+41	
			Trichlorofluoromethane	9.7 ± 0.3	+24	
			Bromomethane	11.4 ± 0.4	+5	
			1,2-Dibromoethane	8.5 ± 0.3	+64	
			1,1,1-Trichloroethane	9.4 ± 0.5	+60	

(Continued)

Table 4. Summary of Performance Audit Results (Continued)

Audit No.	Client***	Use of Audit Material	Audit Material	RTI Audit Conc. (ppb)	Client Audit % Bias (avg.)*	Status of Audit**
60C	I	Ambient air measurement at hazardous waste landfill	Trichloroethylene	9.5 ± 0.5	-34	B
			1,2-Dichloroethane	8.5 ± 0.4	+14	
			1,2-Dibromoethane	8.5 ± 0.3	-7	
			1,1,1-Trichloroethane	9.4 ± 0.5	+17	
60D	I	Ambient air measurement at hazardous waste landfill	Trichloroethylene	9.5 ± 0.5	+26	B
			1,2-Dichloroethane	8.5 ± 0.4	+6	
			1,2-Dibromoethane	8.5 ± 0.3	-7	
			1,1,1-Trichloroethane	9.4 ± 0.5	+4	
61	I	Ambient air measurement at hazardous waste landfill	Freon 114	7.2 ± 1.0	NA	C
			Freon 113	10.2 ± 1.0	NA	
			Vinylidene Chloride	12.5 ± 1.3	NA	
			Acetone	6.7 ± 2.1	NA	
			Toluene	10.5 ± 1.2	NA	
			1,4 Dioxane	10.1 ± 3.3	NA	
			Chlorobenzene	10.8 ± 1.3	NA	
62	USEPA ASRL	Ambient air analysis method evaluation	Benzene	12.2 ± 0.4	-26	B

(Continued)

Table 4. Summary of Performance Audit Results (Continued)

Audit No.	Client***	Use of Audit Material	Audit Material	RTI Audit Conc. (ppb)	Client Audit % Bias (avg.)*	Status of Audit**
63A	JJ	Ambient air measurement method evaluation	Carbon Tetrachloride	86.2 ± 2.6	NA	C
			Chloroform	331 ± 7.0	NA	
			Perchloroethylene	307 ± 7.4	NA	
			Benzene	137 ± 4.4	NA	
			Vinyl Chloride	150 ± 4.8	NA	
63B	JJ	Ambient air measurement method evaluation	Carbon Tetrachloride	132 ± 4.0	NA	C
			Chloroform	128 ± 2.7	NA	
			Perchloroethylene	137 ± 3.3	NA	
			Benzene	138 ± 4.4	NA	
			Vinyl Chloride	153 ± 4.9	NA	
63C	JJ	Ambient air measurement method evaluation	Carbon Tetrachloride	281 ± 8.4	NA	C
			Chloroform	223 ± 4.7	NA	
			Perchloroethylene	347 ± 8.3	NA	
			Benzene	302 ± 9.7	NA	
			Vinyl Chloride	308 ± 9.9	NA	
63D	JJ	Ambient air measurement method evaluation	Carbon Tetrachloride	47.8 ± 1.5	NA	C
			Chloroform	10.8 ± 0.2	NA	
			Perchloroethylene	11.7 ± 0.3	NA	
			Benzene	52.3 ± 1.7	NA	
			Vinyl Chloride	50.4 ± 1.6	NA	

(Continued)

Table 4. Summary of Performance Audit Results (Continued)

Audit No.	Client***	Use of Audit Material	Audit Material	RTI Audit Conc. (ppb)	Client Audit % Bias (avg.)*	Status of Audit**
64A	JJ	Ambient air measurement method evaluation	Acetonitrile	112 ± 7.8	NA	C
			Methyl Ethyl Ketone	140 ± 7.7	NA	
			Trichloroethylene	141 ± 6.8	NA	
			1,2-Dichloroethane	135 ± 6.9	NA	
			Trichlorofluoromethane	161 ± 5.5	NA	
			Bromomethane	168 ± 6.6	NA	
			Dichlroedifluoromethane	164 ± 6.7	NA	
			1,2-Dibromoethane	174 ± 7.1	NA	
			1,1,1-Trichloroethane	0	NA	
64B	JJ	Ambient air measurement method evaluation	Acetonitrile	24.1 ± 1.7	NA	C
			Methyl Ethyl Ketone	28.0 ± 1.5	NA	
			Trichloroethylene	27.6 ± 1.3	NA	
			1,2-Dichloroethane	26.3 ± 1.3	NA	
			Trichlorofluoromethane	29.7 ± 1.0	NA	
			Bromoethane	31.3 ± 1.2	NA	
			Dichlorodifluoromethane	29.7 ± 1.2	NA	
			1,2-Dibromoethane	33.7 ± 1.4	NA	
			1,1,1-Trichloroethane	27.5 ± 1.4	NA	
64C	JJ	Ambient air measurement method evaluation	Acetonitrile	37.6 ± 2.6	NA	C
			Methyl Ethyl Ketone	18.5 ± 1.0	NA	
			Trichloroethylene	38.4 ± 1.8	NA	
			1,2-Dichloroethane	39.3 ± 2.0	NA	
			Trichlorofluoromethane	38.5 ± 1.3	NA	
			Bromoethane	22.0 ± 0.9	NA	
			Dichlorodifluoromethane	20.8 ± 0.9	NA	
			1,2-Dibromoethane	21.7 ± 0.9	NA	
			1,1,1-Trichloroethane	18.2 ± 0.9	NA	

(Continued)

Table 4. Summary of Performance Audit Results (Continued)

Audit No.	Client***	Use of Audit Material	Audit Material	RTI Audit Conc. (ppb)	Client Audit % Bias (avg.)*	Status of Audit**
64D	JJ	Ambient air measurement method evaluation	Acetonitrile	24.2 ± 1.7	NA	C
			Methyl Ethyl Ketone	29.0 ± 1.6	NA	
			Trichloroethylene	28.2 ± 1.4	NA	
			1,2-Dichloroethane	27.3 ± 1.4	NA	
			Trichlorofluoromethane	29.5 ± 1.0	NA	
			Bromomethane	31.4 ± 1.2	NA	
			Dichlroedifluoromethane	29.4 ± 1.2	NA	
			1,2-Dibromoethane	32.6 ± 1.3	NA	
			1,1,1-Trichloroethane	27.2 ± 1.4	NA	
65A	JJ	Ambient air measurement method evaluation	Freon 114	27.6 ± 5.2	NA	C
			Freon 113	10.3 ± 1.3	NA	
			Vinylidene Chloride	32.4 ± 4.5	NA	
			Acetone	7.1 ± 2.2	NA	
			1,4-Dioxane	33.5 ± 11.2	NA	
			Toluene	10.4 ± 0.7	NA	
			Chlorobenzene	29.6 ± 5.0	NA	
65B	JJ	Ambient air measurement method evaluation	Freon 114	25.7 ± 4.9	NA	C
			Freon 113	9.6 ± 1.2	NA	
			Vinylidene Chloride	31.8 ± 4.4	NA	
			Acetone	9.9 ± 3.1	NA	
			1,4-Dioxane	33.5 ± 11.0	NA	
			Toluene	10.2 ± 0.7	NA	
			Chlorobenzene	29.8 ± 5.0	NA	

(Continued)

Table 4. Summary of Performance Audit Results (Continued)

Audit No.	Client***	Use of Audit Material	Audit Material	RTI Audit Conc. (ppb)	Client Audit % Bias (avg.)*	Status of Audit**
65C	JJ	Ambient air measurement method evaluation	Freon 114	24.6 ± 4.6	NA	C
			Freon 113	30.2 ± 3.9	NA	
			Vinylidene Chloride	30.7 ± 4.2	NA	
			Acetone	8.6 ± 2.6	NA	
			1,4-Dioxane	10.0 ± 3.2	NA	
			Toluene	12.3 ± 0.8	NA	
			Chlorobenzene	10.7 ± 1.8	NA	
66	KK	Ambient air measurement at hazardous waste landfill	Carbon Tetrachloride	265 ± 8.0	NA	C
			Chloroform	208 ± 4.4	NA	
			Perchloroethylene	295 ± 7.1	NA	
			Benzene	277 ± 8.9	NA	
			Vinyl Chloride	302 ± 9.7	NA	
67	KK	Ambient air measurement at hazardous waste landfill	Acetonitrile	109 ± 7.6	NA	C
			Methyl Ethyl Ketone	128 ± 7.0	NA	
			Trichloroethylene	139 ± 6.7	NA	
			1,2-Dichloroethane	139 ± 7.1	NA	
			Trichlorofluoromethane	158 ± 5.4	NA	
			Bromomethane	164 ± 6.4	NA	
			Dichlorodifluoromethane	148 ± 6.1	NA	
			1,2-Dibromoethane	164 ± 6.7	NA	
68	Z	Hazardous waste incineration trial burn	Carbon tetrachloride	12.3 ± 0.4	-43	B
			Chloroform	12.2 ± 0.3	+15	
69	Z	Hazardous waste incineration trial burn	Trichloroethylene	9.6 ± 0.5	-6	B

(Continued)

Table 4. Summary of Performance Audit Results (Continued)

Audit No.	Client***	Use of Audit Material	Audit Material	RTI Audit Conc. (ppb)	Client Audit % Bias (avg.)*	Status of Audit**
70	AA	Hazardous waste incineration trial burn	Trichloroethylene	15.1 ± 0.7	+92	B
			1,2-Dichloroethane	15.8 ± 0.8	+27	
			Trichlorofluoromethane	16.2 ± 0.5	-26	
			Bromomethane	14.0 ± 0.5	-57	
			Dichlorodifluoromethane	16.0 ± 0.7	+256	
			1,1,1-Trichloroethane	14.0 ± 0.7	+71	
71	HH	Hazardous waste incineration (boiler)	Carbon Tetrachloride	6.4 ± 0.2	+30	B
72	HH	Hazardous waste incineration (boiler)	1,1,1-Trichloroethane	13.3 ± 0.7	+31	B
73	HH	Hazardous waste incineration (boiler)	Toluene	10.3	+21	B
74	USEPA ASRL	Ambient air analysis method evaluation	Benzene	19.4 ± 0.6	-8	B
75	II	Ambient air measurement at hazardous waste landfill	Carbon Tetrachloride	306 ± 9.2	NA	C
			Chloroform	223 ± 4.7	NA	
			Perchloroethylene	398 ± 9.6	NA	
			Benzene	325 ±10.4	NA	
			Vinyl Chloride	308 ± 9.9	NA	

(Continued)

Table 4. Summary of Performance Audit Results (Continued)

Audit No.	Client***	Use of Audit Material	Audit Material	RTI Audit Conc. (ppb)	Client Audit % Bias (avg.)*	Status of Audit**
76	V	Ambient air analysis method evaluation	Freon 114	9.1 ± 1.3	+34	B
			Freon 113	10.2 ± 1.0	+8	
			Vinylidene Chloride	8.7 ± 0.9	+1	
			Toluene	10.6 ± 1.3	+10	
			Chlorobenzene	11.1 ± 1.5	+11	
77	C	Ambient air analysis method evaluation	Carbon Tetrachloride	46.0 ± 1.4	+6	B
			Chloroform	10.3 ± 0.2	+1	
			Perchloroethylene	10.7 ± 0.3	-19	
			Benzene	49.0 ± 1.6	-9	
			Vinyl Chloride	50.1 ± 1.6	-24	
78	C	Ambient air analysis method evaluation	Trichloroethylene	9.4 ± 0.5	-5	B
			1,2-Dichloroethane	7.7 ± 0.4	+21	
			1,2-Dibromoethane	7.8 ± 0.3	-18	
			1,1,1-Trichloroethane	9.3 ± 0.5	+17	
79	H	Hazardous waste incineration trial burn	Carbon Tetrachloride	6.4 ± 0.2	-67	B
			Perchloroethylene	21.1 ± 0.5	-86	
80	H	Hazardous waste incineration trial burn	Trichloroethylene	14.2 ± 0.7	+20	B
			1,1,1-Trichloroethane	13.3 ± 0.7	+20	

(Continued)

Table 4. Summary of Performance Audit Results (Continued)

Audit No.	Client***	Use of Audit Material	Audit Material	RTI Audit Conc. (ppb)	Client Audit % Bias (avg.)*	Status of Audit**
81	H	Hazardous waste incineration trial burn	Freon 114	8.5 ± 1.3	+131	B
			Freon 113	10.1 ± 1.0	0	
			Vinylidene Chloride	10.9 ± 1.0	-16	
			Acetone	27.6 ± 5.7	-18	
			Toluene	30.8 ± 3.6	+78	
			1,4-Dioxane	28.8 ± 8.9	-79	
			Chlorobenzene	31.4 ± 3.6	+49	
82	CC	Hazardous waste incineration trial burn	Carbon Tetrachloride	37.2 ± 1.1	-5	B
			Chloroform	8.1 ± 0.2	+10	
83	DD	Ambient air measurement method evaluation	Carbon Tetrachloride	86.2 ± 2.6	+7	B
84	DD	Ambient air measurement method evaluation	Toluene	10.3 ± 1.2	+11	B
85	DD	Ambient air measurement method evaluation	Acetonitrile	12.2 ± 0.8	NA	C
			Methyl Ethyl Ketone	7.5 ± 0.4	NA	
			Trichloroethylene	15.1 ± 0.7	NA	
			1,2-Dichloroethane	15.8 ± 0.8	NA	
			Trichlorofluoromethane	16.2 ± 0.5	NA	
			Bromomethane	14.0 ± 0.5	NA	
			Dichlorodifluoromethane	16.0 ± 0.7	NA	
			1,2-Dibromoethane	11.8 ± 0.5	NA	
			1,1,1-Trichloroethane	14.0 ± 0.7	NA	

(Continued)

Table 4. Summary of Performance Audit Results (Continued)

Audit No.	Client***	Use of Audit Material	Audit Material	RTI Audit Conc. (ppb)	Client Audit % Bias (avg.)*	Status of Audit**
86	FF	Hazardous waste incineration trial burn	Carbon Tetrachloride	11.0 ± 0.5	NA	C
			Chloroform	43.6 ± 0.9	NA	
			Perchloroethylene	11.6 ± 0.3	NA	
			Benzene	23.0 ± 0.7	NA	
			Vinyl Chloride	20.5 ± 0.7	NA	
87A	FF	Ambient air measurement at hazardous waste landfill	Acetonitrile	112 ± 7.8	NA	C
			Methyl Ethyl Ketone	140 ± 7.7	NA	
			Trichloroethylene	141 ± 6.8	NA	
			1,2-Dichloroethane	135 ± 6.9	NA	
			Trichlorofluoromethane	161 ± 5.5	NA	
			Bromomethane	168 ± 6.6	NA	
			Dichlorodifluoromethane	164 ± 6.7	NA	
			1,2-Dibromoethane	174 ± 7.1	NA	
87B	FF	Ambient air measurement at hazardous waste landfill	Carbon Tetrachloride	132 ± 4.0	NA	C
			Chloroform	128 ± 2.7	NA	
			Perchloroethylene	137 ± 3.3	NA	
			Benzene	138 ± 4.4	NA	
			Vinyl Chloride	153 ± 4.9	NA	
88	H	Hazardous waste incineration trial burn	Carbon Tetrachloride	6.4 ± 0.2	+33	B
			Perchloroethylene	21.1 ± 0.5	+33	
89	Z	Hazardous waste incineration trial burn	Carbon Tetrachloride	9.6 ± 0.3	+6	B
			Chloroform	37.1 ± 0.8	-2	

(Continued)

Table 4. Summary of Performance Audit Results (Continued)

Audit No.	Client***	Use of Audit Material	Audit Material	RTI Audit Conc. (ppb)	Client Audit % Bias (avg.)*	Status of Audit**
90	Z	Hazardous waste incineration trial burn	Trichloroethylene	13.2 ± 0.7	+5	B
91	LL	Hazardous waste incineration trial burn	Carbon Tetrachloride	16.9 ± 0.5	-22	B
92	LL	Hazardous waste incineration trial burn	Trichloroethylene	13.2 ± 0.7	-1	B
93	W	Hazardous waste trial burn	Carbon Tetrachloride	73.9 ± 2.2	+14	B
			Chloroform	349.8 ± 7.4	-6	
			Perchloroethylene	319.9 ± 9.9	-6	
			Benzene	126.9 ± 4.1	+13	
			Vinyl Chloride	160.3 ± 5.2	+53	
94	H	Hazardous waste trial burn	Carbon Tetrachloride	11.4 ± 0.3	-4	B
95	MM	Hazardous waste trial burn	Carbon Tetrachloride	4474 ± 135	NA	C
			Chloroform	3336 ± 71	NA	
			Perchloroethylene	1659 ± 169	NA	
			Benzene	3348 ± 109	NA	
			Vinyl Chloride	3342 ± 108	NA	
96	NN	Hazardous waste trial burn	Carbon Tetrachloride	47.8 ± 1.5	+47	B
97	NN	Hazardous waste trial burn	Freon 113	30.2 ± 3.9	+48	B

(Continued)

Table 4. Summary of Performance Audit Results (Continued)

Audit No.	Client***	Use of Audit Material	Audit Material	RTI Audit Conc. (ppb)	Client Audit % Bias (avg.)*	Status of Audit**
98	00	Ambient air monitoring method evaluation	Carbon Tetrachloride	14.4 ± 0.4	+63	B
			Chloroform	14.4 ± 0.3	+234	
			Vinyl Chloride	31.3 ± 1.0	+3	
99	00	Ambient air monitoring method evaluation	Trichloroethylene	15.3 ± 0.7	+154	B
			1,2 Dichloroethane	15.4 ± 0.8	+135	
			Trichlorofluoromethane	16.3 ± 0.6	-100	
			Dichlorodifluoromethane	16.3 ± 0.7	+31	
			1,1,1-Trichloroethane	13.9 ± 0.7	+96	
100A	I	Ambient air monitoring method evaluation	Carbon Tetrachloride	37.2 ± 1.1	+16	B
			Chloroform	8.1 ± 0.2	-14	
			Perchloroethylene	9.0 ± 0.2	+10	
			Benzene	39.1 ± 1.3	-13	
			Vinyl Chloride	50.3 ± 1.6	-1	
100B	I	Ambient air monitoring method evaluation	Carbon Tetrachloride	37.2 ± 1.1	-30	B
			Chloroform	8.1 ± 0.2	+7	
			Perchloroethylene	9.0 ± 0.2	0	
			Benzene	39.1 ± 1.3	-10	
100C	I	Ambient air monitoring method evaluation	Carbon Tetrachloride	37.2 ± 1.1	+26	B
			Chloroform	8.1 ± 0.2	+25	
			Perchloroethylene	9.0 ± 0.2	+27	
			Benzene	39.1 ± 1.3	-9	
			Vinyl Chloride	50.3 ± 1.6	-2	

(Continued)

Table 4. Summary of Performance Audit Results (Continued)

Audit No.	Client***	Use of Audit Material	Audit Material	RTI Audit Conc. (ppb)	Client Audit % Bias (avg.)*	Status of Audit**
100D	I	Ambient air monitoring method evaluation	Carbon Tetrachloride	37.2 ± 1.1	-9	B
			Chloroform	8.1 ± 0.2	+52	
			Perchloroethylene	9.0 ± 0.2	+3	
			Benzene	39.1 ± 1.3	-9	
			Vinyl Chloride	50.3 ± 1.6	-2	
100E	I	Ambient air monitoring method evaluation	Carbon Tetrachloride	37.2 ± 1.1	-9	B
			Chloroform	8.1 ± 0.2	+52	
			Perchloroethylene	9.0 ± 0.2	+20	
100F	I	Ambient air monitoring method evaluation	Carbon Tetrachloride	37.2 ± 1.1	+12	B
			Chloroform	8.1 ± 0.2	+5	
			Perchloroethylene	9.0 ± 0.2	+19	
			Benzene	39.1 ± 1.3	-10	
			Vinyl Chloride	50.3 ± 1.6	+22	
100G	I	Ambient air monitoring method evaluation	Chloroform	8.1 ± 0.2	-6	B
			Benzene	39.1 ± 1.3	-23	
101	H	Hazardous waste trial burn	Carbon Tetrachloride	9.6 ± 0.3	+108	B
			Chloroform	37.1 ± 0.8	+69	
			Perchloroethylene	9.1 ± 0.2	+60	
			Benzene	19.4 ± 0.6	+34	
			Vinyl Chloride	20.4 ± 0.7	+67	
102	H	Hazardous waste trial burn	Vinylidene Chloride	8.5 ± 1.1	+79	B
			Toluene	10.5 ± 3.4	+57	
			Chlorobenzene	10.8 ± 1.8	+47	

(Continued)

Table 4. Summary of Performance Audit Results (Continued)

Audit No.	Client***	Use of Audit Material	Audit Material	RTI Audit Conc. (ppb)	Client Audit % Bias (avg.)*	Status of Audit**
103	HH	Hazardous waste trial burn	Carbon Tetrachloride	307 ± 9.1	NA	C
			Chloroform	114 ± 2.4	NA	
			Perchloroethylene	102 ± 29	NA	
			Benzene	289 ± 12.5	NA	
			Vinyl Chloride	423 ± 13.8	NA	
104	HH	Hazardous waste trial burn	Freon 114	125 ± 23	NA	C
			Freon 113	143 ± 18	NA	
			Vinyl Chloride	123 ± 17	NA	
			Acetone	114 ± 35	NA	
			Toluene	161 ± 11	NA	
			1,4-Dioxane	125 ± 41	NA	
			Chlorobenzene	152 ± 26	NA	
105	PP	Hazardous waste trial burn	Acetonitrile	11.3 ± 0.8	-64	B
			Methyl Ethyl Ketone	30.0 ± 1.6	-23	
			Trichloroethylene	10.2 ± 0.5	-11	
			1,2-Dichloroethane	9.7 ± 0.5	-6	
			Trichlorofluoromethane	10.1 ± 0.3	-29	
			Bromomethane	30.0 ± 1.3	-97	
			Dichlorodifluoromethane	26.3 ± 1.0	-69	
			1,2-Dibromoethane	32.0 ± 1.3	-20	
			1,1,1-Trichloroethane	31.7 ± 1.7	-9	
106A	I	Hazardous waste landfill emissions monitoring	Trichloroethylene	39.4 ± 1.9	+12	B
			1,2-Dichloroethane	37.4 ± 1.9	+17	
			1,1,1-Trichloroethane	19.1 ± 1.0	-1	

(Continued)

Table 4. Summary of Performance Audit Results (Continued)

Audit No.	Client***	Use of Audit Material	Audit Material	RTI Audit Conc. (ppb)	Client Audit % Bias (avg.)*	Status of Audit**
106B	I	Hazardous waste landfill emissions monitoring	Trichloroethylene	39.4 ± 1.9	-1	B
			1,2-Dichloroethane	37.4 ± 1.9	-38	
			Dichlorodifluoromethane	20.3 ± 0.8	-6	
			1,2-Dibromoethane	20.8 ± 0.9	-28	
			1,1,1-Trichloroethane	19.1 ± 1.0	+5	
106C	I	Hazardous waste landfill emissions monitoring	Trichloroethylene	39.4 ± 1.9	+12	B
			1,2-Dichloroethane	37.4 ± 1.9	+50	
			1,2-Dibromoethane	20.8 ± 0.9	+6	
			1,1,1-Trichloroethane	19.1 ± 1.0	-27	
107	HH	Hazardous waste trial burn	Carbon Tetrachloride	13.7 ± 0.4	-12	B
			Perchloroethylene	69.9 ± 1.7	-4	
108	HH	Hazardous waste trial burn	Trichloroethylene	10.1 ± 0.5	-1	B
109	QQ	Hazardous waste trial burn	Carbon Tetrachloride	46.0 ± 1.4	NA	C
			Chloroform	10.3 ± 0.2	NA	
			Perchloroethylene	10.7 ± 0.3	NA	
			Benzene	49.0 ± 1.6	NA	
			Vinyl Chloride	50.1 ± 1.6	NA	
110	QQ	Hazardous waste trial burn	Carbon Tetrachloride	73.9 ± 2.2	NA	C
			Chloroform	350 ± 7.4	NA	
			Perchloroethylene	320 ± 7.9	NA	
			Benzene	127 ± 4.1	NA	
			Vinyl Chloride	160 ± 5.2	NA	

(Continued)

Table 4. Summary of Performance Audit Results (Continued)

Audit No.	Client***	Use of Audit Material	Audit Material	RTI Audit Conc. (ppb)	Client Audit % Bias (avg.)*	Status of Audit**
111	RR	Hazardous waste landfill emissions monitoring	Carbon Tetrachloride	13.7 ± 0.4	-39	B
			Chloroform	13.3 ± 0.3	-42	
			Perchloroethylene	69.9 ± 1.7	-54	
			Benzene	46.6 ± 1.5	-27	
			Vinyl Chloride	31.3 ± 1.0	-20	
112	W	Hazardous waste trial burn with VOST	Carbon Tetrachloride	10.5 ± 0.3	+10	B
			Chloroform	40.5 ± 0.9	14	
			Perchloroethylene	11.2 ± 0.3	+3	
			Benzene	19.7 ± 0.6	+41	
			Vinyl Chloride	19.4 ± 0.6	+8	
113	W	Hazardous waste trial burn with VOST	Acetonitrile	37.3 ± 2.6	-59	B
			Methyl Ethyl Ketone	17.7 ± 0.9	-56	
			Trichloroethylene	41.9 ± 2.1	+32	
			1,2-Dichloroethane	38.0 ± 2.0	+24	
			Trichlofluoroemethane(F11)	42.0 ± 1.3	-38	
			Bromothane	25.4 ± 1.0	+43	
			1,2-Dibromoethane	22.2 ± 0.9	+75	
			111-Trichloroethane	21.2 ± 1.1	+22	
114	V	Ambient air monitoring method evaluation	Carbon Tetrachloride	12.3 ± 0.4	NA	C
			Chloroform	48.3 ± 1.0	NA	
			Perchloroethylene	13.3 ± 0.3	NA	
			Benzene	24.6 ± 0.8	NA	
			Vinyl Chloride	21.1 ± 0.71	NA	

(Continued)

Table 4. Summary of Performance Audit Results (Continued)

Audit No.	Client***	Use of Audit Material	Audit Material	RTI Audit Conc. (ppb)	Client Audit % Bias (avg.)*	Status of Audit**
115	V	Ambient air monitoring method evaluation	Acetonitrile	13.1 ± 0.9	NA	C
			Methyl Ethyl Ketone	10.9 ± 0.6	NA	
			Trichloroethylene	14.4 ± 0.71	NA	
			1,2-Dichloroethane	12.5 ± 0.61	NA	
			Trichlorofluoromethane	15.6 ± 0.5	NA	
			Bromomethane	10.4 ± 0.4	NA	
			Dichlorodifluoromethane	16.4 ± 0.6	NA	
			1,2-Dibromoethane	12.1 ± 0.5	NA	
			1,1,1-Trichloroethane	14.8 ± 0.8	NA	
116	H	Hazardous waste trial burn	Carbon Tetrachloride	37.2 ± 1.1	+40	B
			Perchloroethylene	9.0 ± 0.2	+22	
117	TT	Ambient air monitoring method evaluation	Trichloroethylene	13.2 ± 0.7	-31	B
			1,2-Dichloroethane	16.7 ± 0.9	-64	
			1,2-Dibromoethane	16.2 ± 0.7	-100	
			1,1,1-Trichloroethane	16.3 ± 0.9	-81	
118A	I	Ambient air monitoring method evaluation	Trichloroethylene	10.2 ± 0.5	+28	B
			1,2-Dichloroethane	9.7 ± 0.5	+34	
			1,2-Dibromoethane	32.0 ± 1.3	+19	
			1,1,1-Trichloroethane	31.7 ± 1.7	-2	

(Continued)

Table 4. Summary of Performance Audit Results (Continued)

Audit No.	Client***	Use of Audit Material	Audit Material	RTI Audit Conc. (ppb)	Client Audit % Bias (avg.)*	Status of Audit**
118B1	I	Ambient air monitoring method evaluation	Trichloroethylene	10.2 ± 0.5	+1	B
			1,2-Dichloroethane	9.7 ± 0.5	+13	
			Trichlorofluoromethane	10.1 ± 0.3	+1	
			Bromomethane	30.0 ± 1.2	+33	
			Dichlorodifluoromethane	26.3 ± 1.0	+33	
			1,2-Dibromoethane	32.0 ± 1.3	+9	
			1,1,1-Trichloroethane	31.7 ± 1.7	+4	
118B2	I	Ambient air monitoring method evaluation	Trichloroethylene	10.2 ± 0.5	-2	B
			Trichlorofluoromethane	10.1 ± 0.3	+9	
			1,2-Dibromoethane	32.0 ± 1.3	+28	
			1,1,1-Trichloroethane	31.7 ± 1.7	+4	
118C	I	Ambient air monitoring method evaluation	Trichloroethylene	10.2 ± 0.5	+10	B
			Trichlorofluoromethane	10.1 ± 0.3	-42	
			Dichlorodifluoromethane	26.3 ± 1.0	+12	
			1,2-Dibromoethane	32.0 ± 1.3	-38	
			1,1,1-Trichloroethane	31.7 ± 1.7	-12	
118D	I	Ambient air monitoring method evaluation	Methyl Ethyl Ketone	30.0 ± 1.6	0	B
			Trichloroethylene	10.2 ± 0.5	+37	
			1,2-Dichloroethane	9.7 ± 0.5	+24	
			Trichlorofluoromethane	10.1 ± 0.3	+39	
			Bromomethane	30.0 ± 1.2	+43	
			1,2-Dibromoethane	32.0 ± 1.3	+19	
			1,1,1-Trichloroethane	31.7 ± 1.7	+23	

(Continued)

Table 4. Summary of Performance Audit Results (Continued)

Audit No.	Client***	Use of Audit Material	Audit Material	RTI Audit Conc. (ppb)	Client Audit % Bias (avg.)*	Status of Audit**
118E	I	Ambient air monitoring method evaluation	Trichloroethylene	10.2 ± 0.5	+63	B
			1,2-Dichloroethane	9.7 ± 0.5	+47	
			Trichlorofluoromethane	10.1 ± 0.3	+53	
			Bromomethane	30.0 ± 1.2	+251	
			Dichlorodifluoromethane	26.3 ± 1.0	+43	
			1,2-Dibromethane	32.0 ± 1.3	+7	
			1,1,1-Trichloroethane	31.7 ± 1.7	-87	
118F	I	Ambient air monitoring method evaluation	Trichloroethylene	10.2 ± 0.5	+30	B
			1,1,1-Trichloroethane	31.7 ± 1.7	-87	
119	USEPA Region III	Ambient air monitoring method evaluation	Vinyl Chloride	45.8 ± 1.5	+5	B
120	WW	Ambient air monitoring method evaluation	Acetonitrile	153.7 ± 10.6	-19	B
			Methyl Ethyl Ketone	167.2 ± 8.8	-76	
			Trichloroethylene	147.5 ± 7.2	+154	
			1,2-Dichloroethane	154.7 ± 8.0	-25	
			Dichlorodifluoromethane	160.7 ± 6.2	+3	
			1,1,1-Trichloroethane	152.1 ± 8.0	-16	
121	XX	Hazardous waste trial burn	Carbon Tetrachloride	310 ± 9.2	-7	B
122	XX	Hazardous waste trial burn	Toluene	11.6 ± 0.8	-11	B

(Continued)

Table 4. Summary of Performance Audit Results (Continued)

Audit No.	Client***	Use of Audit Material	Audit Material	RTI Audit Conc. (ppb)	Client Audit % Bias (avg.)*	Status of Audit**
123	TT	Ambient air monitoring method evaluation	Carbon Tetrachloride	56.9 ± 1.7	NA	C
124	YY	Hazardous waste trial burn	Carbon Tetrachloride	11.4 ± 0.3	NA	C
			Chloroform	43.9 ± 0.9	NA	
			Perchloroethylene	10.3 ± 0.2	NA	
			Benzene	22.3 ± 0.7	NA	
			Vinyl Chloride	19.8 ± 0.6	NA	
125	YY	Hazardous waste trial burn	Acetonitrile	38.4 ± 2.7	NA	C
			Methyl Ethyl Ketone	16.1 ± 0.8	NA	
			Trichloroethylene	39.4 ± 1.9	NA	
			1,2-Dichloroethane	37.4 ± 1.9	NA	
			Trichlorofluoromethane	40.8 ± 1.3	NA	
			Bromomethane	23.1 ± 0.9	NA	
			Dichlorodifluoromethane	20.3 ± 0.8	NA	
			1,2-Dibromoethane	20.8 ± 0.9	NA	
			1,1,1-Trichloroethane	19.1 ± 1.0	NA	
126	ZZ	Ambient air monitoring method evalution	Carbon Tetrachloride	13.7 ± 0.4	-27	B
			Chloroform	13.3 ± 0.3	-2	
			Perchloroethylene	69.9 ± 1.7	-38	
			Benzene	46.6 ± 1.5	+3	
127	HH	Hazardous waste trial burn	Toluene	10.2 ± 0.7	-12	B

(Continued)

Table 4. Summary of Performance Audit Results (Continued)

Audit No.	Client***	Use of Audit Material	Audit Material	RTI Audit Conc. (ppb)	Client Audit % Bias (avg.)*	Status of Audit**
128	KK	Hazardous waste landfill emissions monitoring	Carbon Tetrachloride	7340 ± 222	+47	B
			Chloroform	9521 ± 203	+16	
			Perchloroethylene	4739 ± 115	-7	
			Benzene	4784 ± 152	+28	
			Vinyl Chloride	9142 ± 294	+37	
129	KK	Hazardous waste landfill emissions monitoring	1,2-Dichloroethane	154.7 ± 8.0	-56	B
			1,2-Dibromoethane	158.4 ± 6.6	-83	
			1,1,1-Trichloroethane	152.1 ± 8.0	-12	
130A	I	Ambient air monitoring method evaluation	Carbon Tetrachloride	54.5 ± 1.6	-3	B
			Chloroform	12.2 ± 0.3	-1	
			Perchloroethylene	13.6 ± 0.3	-15	
			Benzene	49.0 ± 1.6	+8	
130B1	I	Ambient air monitoring method evaluation	Carbon Tetrachloride	54.5 ± 1.6	-4	B
			Chloroform	12.2 ± 0.3	-7	
			Perchloroethylene	13.6 ± 0.3	-5	
			Benzene	49.0 ± 1.6	+9	
130B2	I	Ambient air monitoring method evaluation	Benzene	49.0 ± 1.6	-18	B
130C	I	Ambient air monitoring method evaluation	Carbon Tetrachloride	54.5 ± 1.6	-15	B
			Chloroform	12.2 ± 0.3	-17	
			Perchloroethylene	13.6 ± 0.3	-28	
			Benzene	49.0 ± 1.6	-4	
			Vinyl Chloride	45.8 ± 1.5	+4	

(Continued)

Table 4. Summary of Performance Audit Results (Continued)

Audit No.	Client***	Use of Audit Material	Audit Material	RTI Audit Conc. (ppb)	Client Audit % Bias (avg.)*	Status of Audit**
130D	I	Ambient air monitoring method evaluation	Carbon Tetrachloride	54.5 ± 1.6	-16	B
			Chloroform	12.2 ± 0.3	-16	
			Perchloroethylene	13.6 ± 0.3	-27	
			Benzene	49.0 ± 1.6	+3	
			Vinyl Chloride	45.8 ± 1.5	+7	
130E	I	Ambient air monitoring method evaluation	Carbon Tetrachloride	54.5 ± 1.6	-17	B
			Chloroform	12.2 ± 0.3	-9	
			Perchloroethylene	13.6 ± 0.3	-20	
			Benzene	49.0 ± 1.6	+18	
			Vinyl Chloride	45.8 ± 1.5	-8	
130F	I	Ambient air monitoring method evaluation	Carbon Tetrachloride	54.5 ± 1.6	-12	B
			Chloroform	12.2 ± 0.3	+2	
			Perchloroethylene	13.6 ± 0.3	-53	
131	H	Hazardous waste trial burn	Carbon Tetrachloride	839 ± 25	NA	C
			Chloroform	1492 ± 32	NA	
			Perchloroethylene	832 ± 20	NA	
			Benzene	1560 ± 50	NA	
			Vinyl Chloride	834 ± 27	NA	
132	W	Hazardous waste trial burn	Carbon Tetrachloride	37.2 ± 1.1	+1	B
			Chloroform	8.1 ± 0.2	+22	
			Perchloroethylene	9.0 ± 0.2	+51	
			Benzene	39.1 ± 1.3	-27	
			Vinyl Chloride	50.3 ± 1.6	-53	

(Continued)

Table 4. Summary of Performance Audit Results (Continued)

Audit No.	Client***	Use of Audit Material	Audit Material	RTI Audit Conc. (ppb)	Client Audit % Bias (avg.)*	Status of Audit**
133	RR	Hazardous waste landfill emissions monitoring	Carbon Tetrachloride	14.4 ± 0.4	-24	B
			Chloroform	14.4 ± 0.3	-10	
			Perchloroethylene	70.1 ± 1.7	+3	
			Benzene	45.7 ± 1.5	+27	
			Vinyl Chloride	31.3 ± 1.0	+5	
134	UU	Ambient air monitoring method evaluation	Carbon Tetrachloride	16.9 ± 0.5	NA	C
			Chloroform	15.3 ± 0.4	NA	
			Perchloroethylene	78.0 ± 1.9	NA	
			Benzene	52.6 ± 1.7	NA	
			Vinyl Chloride	31.8 ± 1.0	NA	
135	UU	Ambient air monitoring method evaluation	Acetonitrile	27.1 ± 1.9	NA	C
			Methyl Ethyl Ketone	27.4 ± 1.4	NA	
			Trichloroethylene	29.6 ± 1.5	NA	
			1,2-Dichloroethane	28.6 ± 1.5	NA	
			Trichloroethane	32.1 ± 1.0	NA	
			1,2-Dibromoethane	30.4 ± 1.3	NA	
			1,1,1-Trichloroethane	30.1 ± 1.6	NA	
136	UU	Ambient air monitoring method evaluation	Freon 114	7.6 ± 1.4	NA	C
			Freon 113	10.3 ± 1.3	NA	
			Vinylidene Chloride	11.7 ± 1.6	NA	
			Acetone	24.7 ± 7.7	NA	
			1,4-Dioxane	33.7 ± 11.1	NA	
			Toluene	33.5 ± 2.3	NA	
			Chlorobenzene	30.8 ± 5.2	NA	

(Continued)

Table 4. Summary of Performance Audit Results (Continued)

Audit No.	Client***	Use of Audit Material	Audit Material	RTI Audit Conc. (ppb)	Client Audit % Bias (avg.)*	Status of Audit**
137	O	Hazardous waste trial burn	Carbon Tetrachloride	70.0 ± 2.1	-21	B
138	O	Hazardous waste trial burn	Toluene	32.8 ± 2.3	-13	B
139	HH	Hazardous waste trial burn	Carbon Tetrachloride	10.5 ± 0.3	-3	B
140	Region VII	Ambient air monitoring method evaluation	Carbon Tetrachloride	1584 ± 48	-4	B
			Chloroform	844 ± 18	+17	
			Vinyl Chloride	1585 ± 51	-8	
141	Region VII	Ambient air monitoring method evaluation	Trichloroethylene	29.5 ± 1.5	+28	B
			1,2-Dichloroethane	27.8 ± 1.4	+51	
			Trichlorofluoromethane	32.9 ± 1.0	+5	
			Dichlorodifluoromethane	26.2 ± 1.0	+3	
			1,1,1-Trichloroethane	29.8 ± 1.6	+39	
142	Q	Hazardous waste trial burn	Carbon Tetrachloride	15.4 ± 0.5	NA	C
143	AC	Hazardous waste trial burn	Carbon Tetrachloride	37.2 ± 1.1	NA	C
			Chloroform	8.1 ± 0.2	NA	
			Perchloroethylene	9.0 ± 0.2	NA	
			Benzene	39.1 ± 1.3	NA	
			Vinyl Chloride	50.3 ± 1.6	NA	

(Continued)

Table 4. Summary of Performance Audit Results (Continued)

Audit No.	Client***	Use of Audit Material	Audit Material	RTI Audit Conc. (ppb)	Client Audit % Bias (avg.)*	Status of Audit**
144	VV	Hazardous waste trial burn	Carbon Tetrachloride Perchloroethylene	10.5 ± 0.3 11.2 ± 0.3	NA	C
145	VV	Hazardous waste trial burn	Carbon Tetrachloride Perchloroethylene	310 ± 9.2 122 ± 3.0	NA	C
146	AE	Ambient air monitoring method evaluation	Vinyl Chloride	423 ± 13.8	NA	C
147	AE	Ambient air monitoring method evaluation	Acetonitrile	112 ± 7.8	NA	C
148	AE	Ambient air monitoring method evaluation	Toluene	161 ± 11	NA	C
149	A	Hazardous waste trial burn	Carbon Tetrachloride	8.0 ± 0.2	NA	C
150	A	Hazardous waste trial burn	Carbon Tetrachloride	2968 ± 58	NA	C
151	AH	Ambient air monitoring method evaluation (Method A)	Carbon Tetrachloride Benzene Vinyl Chloride	79.6 ± 2.3 75.6 ± 2.4 69.3 ± 2.2	-12 +12 +7	B
151	AH	Ambient air monitoring method evaluation (Method B)	Carbon Tetrachloride Chloroform Perchloroethylene	79.6 ± 2.3 72.2 ± 1.5 79.9 ± 2.0	-2 +4 -10	B

(Continued)

Table 4. Summary of Performance Audit Results (Continued)

Audit No.	Client***	Use of Audit Material	Audit Material	RTI Audit Conc. (ppb)	Client Audit % Bias (avg.)*	Status of Audit**
152	AH	Ambient air monitoring method evaluation (Method A)	Carbon Tetrachloride	134 ± 4.0	+8	B
			Chloroform	137 ± 4.4	+35	
			Perchloroethylene	151 ± 4.9	+15	
		(Method B)	Carbon Tetrachloride	134 ± 4.0	+10	
			Chlorofrom	129 ± 2.7	+16	
			Perchloroethylene	139 ± 3.4	-24	
153	HH	Hazardous waste trial burn	Carbon Tetrachloride	12.3 ± 0.4	NA	C
154	HH	Hazardous waste trial burn	Acetonitrile	13.1 ± 0.9	NA	C
155	AI	Ambient air monitoring method evaluation	Freon 114	7.2 ± 1.4	NA	C
			Freon 113	10.2 ± 1.3	NA	
			Vinylidene Chloride	12.5 ± 1.7	NA	
			Acetone	6.7 ± 2.1	NA	
			1,4-Dioxane	10.1 ± 3.3	NA	
			Toluene	10.5 ± 0.7	NA	
			Chlorobenzene	10.8 ± 1.8	NA	
156	AI	Ambient air monitoring method evaluation	Acetonitrile	13.1 ± 0.9	NA	C
157	AI	Ambient air monitoring method evaluation	Freon 114	7.2 ± 1.4	NA	C

(Continued)

Table 4. Summary of Performance Audit Results (Continued)

Audit No.	Client***	Use of Audit Material	Audit Material	RTI Audit Conc. (ppb)	Client Audit % Bias (avg.)*	Status of Audit**
158	X	Ambient air monitoring method evaluation	Carbon Tetrachloride	14.4 ± 0.4	NA	C
159	AF	Hazardous waste trial burn	Carbon Tetrachloride	291 ± 8.7	-21	B
			Chloroform	232 ± 4.9	-25	
			Perchloroethylene	365 ± 9.0	-28	
			Benzene	300 ± 9.7	+23	
160	AJ	Hazardous waste trial burn	Carbon Tetrachloride	21.4 ± 2.4	+12	B
			Chloroform	10.6 ± 0.6	+19	
			Perchloroethylene	20.6 ± 1.0	-5	
			Benzene	10.3 ± 0.5	+59	
			Vinyl Chloride	29.4 ± 2.5	-46	
161	AG	Hazardous waste trial burn	Carbon Tetrachloride	9.5 ± 2.6	NA	A
			Chloroform	40.6 ± 0.9	NA	
			Perchloroethylene	10.1 ± 2.7	NA	
			Benzene	19.2 ± 0.6	NA	
			Vinyl Chloride	20.1 ± 0.6	NA	
162	AG	Hazardous waste trial burn	Freon 114	21.8 ± 4.1	NA	A
			Freon 113	28.9 ± 3.7	NA	
			Vinylidene Chloride	33.3 ± 4.6	NA	
			Acetone	9.2 ± 2.5	NA	
			1,4-Dioxane	11.4 ± 3.7	NA	
			Toluene	11.6 ± 0.8	NA	
			Chlorobenzene	11.7 ± 1.9	NA	

(Continued)

Table 4. Summary of Performance Audit Results (Continued)

Audit No.	Client***	Use of Audit Material	Audit Material	RTI Audit Conc. (ppb)	Client Audit % Bias (avg.)*	Status of Audit**
163	HH	Hazardous waste landfill emissions monitoring	Carbon Tetrachloride	46.0 ± 1.4	NA	A
			Chloroform	10.3 ± 0.2	NA	
			Perchloroethylene	10.7 ± 0.3	NA	
			Benzene	49.0 ± 1.6	NA	
			Vinyl Chloride	50.1 ± 1.6	NA	
164	HH	Hazardous waste landfill emissions monitoring	Acetonitrile	14.9 ± 1.1	NA	A
			Methyl Ethyl Ketone	18.1 ± 1.0	NA	
			Trichloroethylene	13.2 ± 0.7	NA	
			1,2-Dichloroethane	16.7 ± 0.9	NA	
			Trichlorofluoromethane	15.9 ± 0.5	NA	
			Bromomethane	12.6 ± 0.5	NA	
			Dichlorodifluoromethane	15.5 ± 0.6	NA	
			1,2-Dibromoethane	16.2 ± 0.7	NA	
			1,1,1-Trichloroethane	16.3 ± 0.9	NA	
165A	I	Ambient air monitoring method evaluation	Trichloroethylene	10.1 ± 0.5	+7	B
			1,2-Dichloroethane	10.5 ± 0.5	-7	
			1,2-Dibromoethane	31.8 ± 1.3	-16	
			1,1,1-Trichloroethane	33.9 ± 1.8	-14	
165B	I	Ambient air monitoring method evaluation	Trichloroethylene	10.1 ± 0.5	+6	B
			Trichlorofluoromethane	9.8 ± 0.3	+3	
			1,2-Dibromoethane	31.8 ± 1.3	+2	
			1,1,1-Trichloroethane	33.9 ± 1.8	-8	

(Continued)

Table 4. Summary of Performance Audit Results (Continued)

Audit No.	Client***	Use of Audit Material	Audit Material	RTI Audit Conc. (ppb)	Client Audit % Bias (avg.)*	Status of Audit**
165C	I	Ambient air monitoring method evaluation	Methyl Ethyl Ketone	29.0 ± 1.5	0	B
			Trichloroethylene	10.1 ± 0.5	+2	
			Trichlorofluoromethane	9.8 ± 0.3	-6	
			Bromomethane	39.1 ± 1.6	-25	
			Dichlorodifluoromethane	27.7 ± 1.1	+6	
			1,2-Dibromoethane	31.8 ± 1.3	-24	
			1,1,1-Trichloroethane	33.9 ± 1.8	-39	
165D	I	Ambient air monitoring method evaluation	Methyl Ethyl Ketone	29.0 ± 1.5	+7	B
			Trichloroethylene	10.1 ± 0.5	-4	
			1,2-Dichloroethane	10.5 ± 0.5	-24	
			Trichlorofluoromethane	9.8 ± 0.3	+12	
			Bromomethane	39.1 ± 1.6	-2	
			Dichlorodifluoromethane	27.7 ± 1.1	-10	
			1,2-Dibromoethane	31.8 ± 1.3	-10	
			1,1,1-Trichloroethane	33.9 ± 1.8	-3	
165E	I	Ambient air monitoring method evaluation	Trichloroethylene	10.1 ± 0.5	+23	B
			1,2-Dichloroethane	10.5 ± 0.5	-31	
			Trichlorofluoromethane	9.8 ± 0.3	+28	
			Bromomethane	39.1 ± 1.6	+42	
			Dichlorodifluoromethane	27.7 ± 1.1	-43	
			1,2-Dibromoethane	31.8 ± 1.3	-43	
			1,1,1-Trichloroethane	33.9 ± 1.8	+17	
166	USEPA-ERT Edison, NJ	Ambient air monitoring method evaluation	Carbon Tetrachloride	4308 ± 130	NA	A
			Chloroform	3200 ± 68	NA	
			Perchloroethylene	6765 ± 164	NA	
			Benzene	3283 ± 104	NA	
			Vinyl Chloride	3122 ± 101	NA	

(Continued)

Table 4. Summary of Performance Audit Results (Continued)

Audit No.	Client***	Use of Audit Material	Audit Material	RTI Audit Conc. (ppb)	Client Audit % Bias (avg.)*	Status of Audit**
167	USEPA-ERT Edison, NJ	Ambient air monitoring method evaluation	Acetonitrile	140 ± 9.9	NA	A
			Methyl Ethyl Ketone	159 ± 8.4	NA	
			Trichloroethylene	143 ± 7.0	NA	
			1,2-Dichloroethane	161 ± 8.3	NA	
			Trichlorofluoromethane	168 ± 5.3	NA	
			Bromomethane	178 ± 7.1	NA	
			Dichlorodifluoromethane	168 ± 6.5	NA	
			1,2-Dibromoethane	206 ± 8.5	NA	
168	USEPA-ERT Edison, NJ	Ambient air monitoring method evaluation	Freon 114	125 ± 23	NA	A
			Freon 113	123 ± 17	NA	
			Vinylidene Chloride	114 ± 35	NA	
			Acetone	125 ± 41	NA	
			1,4-Dioxane	161 ± 11	NA	
			Toluene	152 ± 26	NA	
			Chlorobenzene			
169	USEPA-ERT Edison, NJ	Ambient air monitoring method evaluation	1,3-Butadiene	5780 ± 208	NA	A
			Ethylene Oxide	5430 ± 230	NA	
			Propylene Oxide	8080 ± 319	NA	
			Methylene Chloride	5930 ± 248	NA	
			Acrylonitrile	5800 ± 233	NA	
			Ortho-xylene	8440 ± 707	NA	

(Continued)

Table 4. Summary of Performance Audit Results (Continued)

Audit No.	Client***	Use of Audit Material	Audit Material	RTI Audit Conc. (ppb)	Client Audit % Bias (avg.)*	Status of Audit**
170	AK	Hazardous waste trial burn	Acetonitrile	119 ± 8.3	+13	B
171	AK	Hazardous waste trial burn	Acrylonitrile	29.3 ± 2.0	+199	B
172	AL	Ambient air monitoring method evaluation	Carbon Tetrachloride	12.3 ± 0.4	-19	B
			Chloroform	48.3 ± 1.0	-9	
			Perchloroethylene	13.3 ± 0.3	-25	
			Benzene	24.6 ± 0.8	-31	
			Vinyl Chloride	21.1 ± 0.7	-10	
173	AL	Ambient air monitoring method evaluation	Acetonitrile	9.3 ± 0.7	-100	B
			Trichloroethylene	8.6 ± 0.4	+6	
			1,2-Dichloroethane	10.5 ± 0.5	+6	
			Trichlorofluoromethane	9.4 ± 0.3	-14	
			Dichlorodifluoromethane	10.6 ± 0.4	-14	
			1,1,1-Trichloroethane	8.5 ± 0.4	+18	
174	AL	Ambient air monitoring method evaluation	Freon 114	142 ± 26	-13	B
			Freon 113	155 ± 20	-27	
			Vinylidene Chloride	157 ± 22	-23	
			Toluene	162 ± 11	-15	
			Chlorobenzene	161 ± 27	-8	

(Continued)

Table 4. Summary of Performance Audit Results (Continued)

Audit No.	Client***	Use of Audit Material	Audit Material	RTI Audit Conc. (ppb)	Client Audit % Bias (avg.)*	Status of Audit**
175	I	Ambient air monitoring method evaluation	Carbon Tetrachloride	129 ± 3.8	NA	A
			Chloroform	123 ± 2.6	NA	
			Perchloroethylene	131 ± 3.2	NA	
			Benzene	130 ± 4.2	NA	
			Vinyl Chloride	153 ± 5.0	NA	
176	I	Ambient air monitoring method evaluation	Acetonitrile	137 ± 9.4	NA	A
			Methyl Ethyl Ketone	155 ± 8.2	NA	
			Trichloroethylene	148 ± 7.2	NA	
			1,2-Dichloroethane	152 ± 7.8	NA	
			Trichlorofluoromethane	153 ± 4.7	NA	
			Bromomethane	185 ± 7.4	NA	
			Dichlorodifluoromethane	158 ± 6.1	NA	
			1,2-Dibromoethane	162 ± 6.8	NA	
			1,1,1-Trichloroethane	149 ± 7.8	NA	
177A	I	Ambient air monitoring method evaluation	1,3-Butadiene	12.6 ± 1.7	-21	B
			Methylene Chloride	10.7 ± 1.1	-15	
177B	I	Ambient air monitoring method evaluation	1,3-Butadiene	12.6 ± 1.7	+3	B
			Methylene Chloride	10.7 ± 1.1	-32	
			Ortho-xylene	11.2 ± 1.1	+25	
177C	I	Ambient air monitoring method evaluation	Methylene Chloride	10.7 ± 1.1	-29	B
			Ortho-xylene	11.2 ± 1.1	+4	

(Continued)

Table 4. Summary of Performance Audit Results (Continued)

Audit No.	Client***	Use of Audit Material	Audit Material	RTI Audit Conc. (ppb)	Client Audit % Bias (avg.)*	Status of Audit**
177D	I	Ambient air monitoring method evaluation	Methylene Chloride	10.7 ± 1.1	-6	B
178	AM	Hazardous waste trial burn	Carbon Tetrachloride	307 ± 9.1	NA	A
			Chloroform	114 ± 2.4	NA	
			Perchloroethylene	120 ± 2.9	NA	
			Benzene	389 ± 12.5	NA	
			Vinyl Chloride	423 ± 13.8	NA	
179	AM	Hazardous waste trial burn	1,3-Butadiene	940 ± 34	NA	A
			Ethylene Oxide	700 ± 30	NA	
			Propylene Oxide	960 ± 38	NA	
			Methylene Chloride	840 ± 35	NA	
			Acrylonitrile	1010 ± 41	NA	
			Ortho-xylene	1090 ± 42	NA	
180	QQ	Hazardous waste trial	Chlorobenzene	28.5 ± 4.8	-8	B
181	W	Hazardous waste trial burn	Carbon Tetrachloride	291 ± 8.6	-74	B
			Chloroform	123 ± 2.6	-61	
			Perchloroethylene	104 ± 2.6	-52	
			Benzene	367 ± 11.8	-84	
			Vinyl Chloride	416 ± 13.6	-32	

(Continued)

Table 4. Summary of Performance Audit Results (Continued)

Audit No.	Client***	Use of Audit Material	Audit Material	RTI Audit Conc. (ppb)	Client Audit % Bias (avg.)*	Status of Audit**
182	RR	Hazardous waste landfill emissions monitoring	Acetonitrile	36.2 ± 2.5	-17	B
			Methyl Ethyl Ketone	18.0 ± 0.9	NA	
			Trichloroethylene	41.1 ± 2.1	-10	
			1,2-Dichloroethane	40.7 ± 2.1	+3	
			Trichlorofluoromethane	39.4 ± 1.2	+17	
			Bromomethane	24.5 ± 1.0	NA	
			Dichlorodifluoromethane	22.4 ± 0.8	+38	
			1,2-Dibromoethane	22.7 ± 0.9	-10	
			1,1,1-Trichloroethane	20.3 ± 1.1	-6	
183	HH	Hazardous waste landfill emissions monitoring	Freon 114	22.5 ± 4.1	NA	A
			Freon 113	11.0 ± 1.3	NA	
			Vinylidene Chloride	35.2 ± 4.9	NA	
			Acetone	9.0 ± 2.7	NA	
			1,4-Dioxane	26.0 ± 8.0	NA	
			Toluene	11.1 ± 0.8	NA	
			Chlorobenzene	29.0 ± 4.6	NA	
184	A	Hazardous waste trial burn	Carbon Tetrachloride	79.6 ± 2.3	NA	A
			Chloroform	72.2 ± 1.5	NA	
			Perchloroethylene	79.6 ± 2.0	NA	
			Benzene	75.6 ± 2.4	NA	
			Vinyl Chloride	69.3 ± 2.2	NA	

(Continued)

Table 4. Summary of Performance Audit Results (Continued)

Audit No.	Client***	Use of Audit Material	Audit Material	RTI Audit Conc. (ppb)	Client Audit % Bias (avg.)*	Status of Audit**
185	O	Hazardous waste trial burn	Trichloroethylene	10.1 ± 0.5	+14	B
186	O	Hazardous waste trial burn	Toluene	10.2 ± 0.7	+3	B
187	A	Ambient air monitoring method evaluation	Bromomethane	5.60 ± 0.6	NA	A
			Trichlorofluoromethane	4.80 ± 0.6	NA	
			1,1,1-Trichloroethane	5.17 ± 0.5	NA	
			1,2-Dichloropropane	5.20 ± 0.5	NA	
			1,2-Dibromoethane	5.10 ± 0.4	NA	
			Toluene	4.96 ± 0.4	NA	
			Chlorobenzene	5.18 ± 0.3	NA	
			Ethylbenzene	4.80 ± 0.3	NA	
			Ortho-xylene	5.21 ± 0.3	NA	
188	QQ	Hazardous waste trial burn	Carbon Tetrachloride	37.2 ± 1.1	-13	A
			Chloroform	8.1 ± 0.2	-22	
			Perchloroethylene	9.0 ± 0.2	-11	
			Benzene	39.1 ± 1.3	-27	
			Vinyl Chloride	50.1 ± 1.6	-44	
189	AN	Hazardous waste trial burn	Carbon Tetrachloride	9.45 ± 0.3	NA	A
			Chloroform	40.6 ± 0.9	NA	
			Perchloroethylene	10.1 ± 0.3	NA	
			Benzene	19.2 ± 0.6	NA	
			Vinyl Chloride	20.1 ± 0.6	NA	

(Continued)

Table 4. Summary of Performance Audit Results (Continued)

Audit No.	Client***	Use of Audit Material	Audit Material	RTI Audit Conc. (ppb)	Client Audit % Bias (avg.)*	Status of Audit**
190	AN	Hazardous waste trial burn	Carbon Tetrachloride	307 ± 9.1	NA	A
			Chloroform	114 ± 2.4	NA	
			Perchloroethylene	120 ± 2.9	NA	
			Benzene	389 ± 12.5	NA	
			Vinyl Chloride	423 ± 13.8	NA	
191	JJ	Ambient air monitoring method evaluation	Carbon Tetrachloride	133 ± 4.0	NA	A
			Chloroform	132 ± 2.8	NA	
			Perchloroethylene	139 ± 3.4	NA	
			Benzene	134 ± 4.3	NA	
			Vinyl Chloride	152 ± 5.0	NA	
192	JJ	Ambient air monitoring method evaluation	Acetonitrile	140 ± 9.7	NA	A
			Methyl Ethyl Ketone	142 ± 7.5	NA	
			Trichlorofluoromethane	152 ± 7.4	NA	
			1,2-Dichloroethane	146 ± 7.6	NA	
			Trichlorofluoromethane	151 ± 4.7	NA	
			Bromomethane	178 ± 7.2	NA	
			Dichlorodifluoromethane	155 ± 6.0	NA	
			1,2-Dibromoethane	152 ± 6.0	NA	
			1,1,1-Trichloroethane	146 ± 7.7	NA	
193	KK	Ambient air monitoring method evaluation	Carbon Tetrachloride	7114 ± 118	NA	A
			Chloroform	7984 ± 213	NA	
			Perchloroethylene	4687 ± 129	NA	
			Benzene	4017 ± 152	NA	
			Vinyl Chloride	8014 ± 133	NA	

(Continued)

Table 4. Summary of Performance Audit Results (Continued)

Audit No.	Client***	Use of Audit Material	Audit Material	RTI Audit Conc. (ppb)	Client Audit % Bias (avg.)*	Status of Audit**
194	KK	Ambient air monitoring method evaluation	1,3-Butadiene	923 ± 35	NA	A
			Ethylene Oxide	697 ± 30	NA	
			Propylene Oxide	932 ± 36	NA	
			Methylene Chloride	823 ± 36	NA	
			Acetonitrile	1080 ± 50	NA	
			Ortho-xylene	1130 ± 98	NA	
195	I	Ambient air monitoring method evaluation	Vinyl Chloride	9.80 ± 1.2	NA	A
			Chloroform	10.5 ± 0.6	NA	
			Carbon Tetrachloride	10.0 ± 0.8	NA	
			Methylene Chloride	10.3 ± 1.1	NA	
			1,2-Dichloroethane	9.84 ± 0.8	NA	
			Trichloroethylene	10.6 ± 0.7	NA	
			Benzene	9.27 ± 0.9	NA	
			Tetrachloroethylene	10.1 ± 0.9	NA	
			1,3-Butadiene	10.1 ± 1.2	NA	
			Bromomethane	5.60 ± 0.6	NA	
			Trichlorofluoromethane	4.80 ± 0.6	NA	
			1,1,1-Trichloroethane	5.17 ± 0.5	NA	
			1,2-Dichloropropane	5.20 ± 0.5	NA	
			1,2-Dibromoethane	5.10 ± 0.4	NA	
			Toluene	4.96 ± 0.4	NA	
			Chlorobenzene	5.18 ± 0.3	NA	
			Ethylbenzene	4.80 ± 0.3	NA	
			Ortho-xylene	5.21 ± 0.3	NA	

(Continued)

Table 4. Summary of Performance Audit Results (Continued)

Audit No.	Client***	Use of Audit Material	Audit Material	RTI Audit Conc. (ppb)	Client Audit % Bias (avg.)*	Status of Audit**
196	A	Ambient air monitoring method evaluation (Method 1)	Chloroform	4.95 ± 0.6	+11	B
			Carbon Tetrachloride	4.67 ± 0.5	+50	
			Methylene Chloride	5.00 ± 0.6	+28	
			Trichloroethylene	5.61 ± 0.3	+11	
			Tetrachloroethylene	5.02 ± 0.3	-24	
			1,1,1-Trichloroethane	4.67 ± 0.3	+31	
196	I	Ambient air monitoring method evaluation (Method 2)	Chloroform	4.95 ± 0.6	-1	B
			Carbon Tetrachloride	4.67 ± 0.5	+5	
			Methylene Chloride	5.00 ± 0.6	-2	
			Trichloroethylene	5.61 ± 0.3	-25	
			Tetrachloroethylene	5.02 ± 0.3	-2	
			1,1,1-Trichloroethane	4.67 ± 0.3	+14	
197	A	Ambient air monitoring method evaluation	Vinyl Chloride	4.83 ± 0.5	NA	A
			Chloroform	4.85 ± 0.3	NA	
			Carbon Tetrachloride	4.99 ± 0.4	NA	
			Methylene Chloride	5.12 ± 0.6	NA	
			1,2-Dichloroethane	4.86 ± 0.3	NA	
			Trichloroethylene	5.47 ± 0.4	NA	
			Benzene	4.88 ± 0.3	NA	
			Tetrachloroethylene	5.13 ± 0.3	NA	
			1,3-Butadiene	6.05 ± 1.3	NA	

(Continued)

Table 4. Summary of Performance Audit Results (Continued)

Audit No.	Client***	Use of Audit Material	Audit Material	RTI Audit Conc. (ppb)	Client Audit % Bias (avg.)*	Status of Audit**
198	AD	Hazardous waste trial burn	Acetonitrile	9.30 ± 0.7	NA	A
			Methyl Ethyl Ketone	12.7 ± 0.7	NA	
			Trichloroethylene	8.6 ± 0.4	NA	
			1,2-Dichloroethane	10.5 ± 0.5	NA	
			Trichlorofluoromethane	9.40 ± 0.3	NA	
			Bromomethane	10.1 ± 0.4	NA	
			Dichlorodifluoromethane	10.6 ± 0.4	NA	
			1,2-Dibromoethane	9.30 ± 0.4	NA	
			1,1,1-Trichloroethane	8.50 ± 0.4	NA	

*Client % Bias = $100 \times \frac{\text{Client-Measured Concentration - RTI-Measured Concentration}}{\text{RTI-Measured Concentration}}$

**Status Codes: A = Audit not complete
B = Audit complete
C = Audit completed without results
NA = Not analyzed by auditee

***Whenever the auditee is known, an alphabetical letter is shown. Whenever the auditee is unknown or the audit is a self-audit, the name of the agency requesting the audit is shown.

****Audit of instrument calibration procedure.

SECTION 4
STABILITY STUDIES

An ideal calibration standard or audit material should be stable over its total time of usage. Such standards or materials may be considered stable if the results of reanalyses over time fall within the 95% confidence limits of the combined uncertainty for the preparation and analysis of the analyte concentrations.

The gas mixtures were generally analyzed twice by the manufacturer before shipment to RTI. These analyses were performed to verify that the components in the cylinder were stable at the manufacturing facility before shipment to RTI. The gas mixtures are then analyzed at RTI upon receipt from the specialty gas vendor to corroborate the vendors analysis. The gas mixtures are again analyzed by RTI at 2 months, 6 months, 12 months, and on an annual basis thereafter following the initial RTI analysis to determine the long term stability of the gas mixtures. The results of the analyses of the cylinder gases by the manufacturer and by RTI, along with the results for the RTI analysis of NBS primary standards are summarized in the stability data tables shown in Appendix A.

Relative accuracies of the cylinder gas analyses for Group I, Group II, Group III, Group IV and Group V compounds have been determined using NBS primary standards on each day of RTI analysis. The method used by NBS to estimate the total uncertainty of NBS primary standards at the 95 percent confidence level has been reported.[1] The NBS concentrations and their total uncertainties at 95% confidence limits for Group I, Group II, Group III, Group IV and Group V compounds are included in the stability data tables in Appendix A. These primary standards have been assessed for stability by NBS, and no change in concentrations has been observed that has exceeded the 95% confidence limit of the concentrations. The NBS maintains a continued QA program for these primary standards in which reanalyses are conducted over time to verify that the concentrations have not changed.

An examination of the stability data for the cylinders gases in Appendix A shows that values for the Group I, Group II and Group III compounds usually vary by less than 10 percent for 4 or 5 analyses over a 2-year period. This variation includes the uncertainty of the NBS primary standards and precision of the RTI measurement process. The possible sources of

experimental error in the measurement process that contribute to this variability include: (1) the variability of the sampling injection technique used for analyses of the primary standards and the audit cylinders; and (2) the instrumental variability in operating and detector parameters. Each of these sources of variability contributes to the total uncertainty of the resulting data presented in Appendix A.

The procedure used for the determination of day-to-day measurement uncertainty (repeatability when NBS primary gas standards are used for calibration is different then the procedure used when calibration was performed with permeation devices. The total uncertainty calculation procedure when using permeation devices was described in Status Report #3.[3] The total uncertainty for the measurements when calibration is with an NBS primary gas standard is arrived at by summing in quadrature the estimates of error from several sources. These sources of error include:

1. NBS uncertainties associated with concentration values reported by NBS for the primary standard cylinder;
2. Uncertainties associated with the RTI injection of the primary NBS calibration cylinder, and the error associated with peak area measurement;
3. Uncertainties associated with the RTI injection of the sample cylinder and the error associated with the peak area measurement.

The analytical results are reported as the mean parts-per-billion value for three replicate injections of a given sample cylinder plus or minus the calculated total uncertainty in parts-per-billion. The total uncertainty at the 95% confidence limits is calculated as follows:

$$u\ (95\%\ \text{confidence}) = \bar{x} * 2\ \sqrt{((a/2)^2 + b^2 + c^2)}$$

where: $\bar{x}$ = Mean concentration in ppb;

a = Uncertainty (95% confidence) associated with the concentration value of a given organic, reported by NBS for the NBS-traeable standard mixture, expressed as relative standard deviation;

b = Uncertainty associated with the RTI analysis imprecision (one standard deviation) of the NBS-traceable standard used for calibration, expressed as relative standard deviation.

c = Uncertainty associated with the RTI analysis imprecision (peak area, one standard deviation) of the sample cylinder, expressed as relative standard deviation.

In this manner, the total uncertainty at the 95% confidence limit is assigned to the concentration of each organic determined in the audit cylinder mixtures.

The question of whether the uncertainties expressed in the above equation should be pooled in quadrature or linearly to obtain the total uncertainty is currently under statistical evaluation by NBS/EPA/RTI. Any modification to this equation, including the consideration of the number of analyses involved in the b and c terms, will be addressed in the future report.

SECTION 5
SUMMARY AND CONCLUSIONS

Cylinder gases containing 29 gaseous organic compounds at parts-per-billion levels have been used successfully in audits to assess the relative accuracy of analytical systems, especially those used during hazardous waste trial burn tests and ambient air monitoring. The cylinder gases contain five mixtures of five, six, eight, nine and eighteen organic compounds each. These mixtures were blended by a commercial specialty gas supplier in aluminum cylinders in a balance gas of nitrogen. The five component mixture (Group I) contains carbon tetrachloride, chloroform, tetrachloroethylene (perchloroethylene), vinyl chloride and benzene. The nine component mixture (Group II) includes trichloroethylene, 1,2-dichloroethane, 1,2-dibromoethane, acetonitrile, trichlorofluoromethane (F-11), dichlorodifluoromethane (F-12), bromomethane, methyl ethyl ketone and 1,1,1-trichloroethane. The eight component mixture (Group III) includes pyridine*, vinylidene chloride, 1,1,2-trichloro 1,2,2-trifluoroethane (F-113), 1,2- dichloro 1,1,2,2-tetrafluoroethane (F-114), acetone, 1,4-dioxane, toluene, and chlorobenzene. The six component mixture (Group IV) includes acrylonitrile, 1,3-butadiene, ethylene oxide, methylene chloride, propylene oxide, and o-xylene. The eighteen component mixture (Group V) includes vinyl chloride, chloroform, carbon tetrachloride, methylene chloride, 1,2-dichloroethane, trichloroethylene, benzene, tetrachloroethylene, 1,3-butadiene, bromomethane, trichlorofluoromethane (F-11), 1,1,1-trichloroethane, 1,2-dichloropropane, 1,2-dibromoethane, toluene, chlorobenzene, ethylbenzene and o-xylene.

Stability studies for 29 compounds (Group I, Group II, Group III, Group IV and Group V) have been performed to determine the feasibility of using them as audit materials. Results indicate that all of the organics tested (with the exception of ethylene oxide and propylene oxide) are stable enough to be used as reliable audit materials.

Subsequent to completion of the stability studies, 198 performance audits have been initiated to date with Group I, Group II and Group III cylinders and 172 are complete. Generally, the audit results are within $\pm$ 50 percent of the audit concentrations measured by RTI.

*Although Group III cylinders contain pyridine, it is not included in the cylinder gases due to severe analytical difficulties.

REFERENCES

1. Rhoderick, G. C., W. F. Cuthrell and W. L. Zielinski, Jr., "A Gravimetric Technique for the Preparation of Accurate Trace Organic Gas Standards", Proceedings APCA International Specialty Conference on Quality Assurance in Air Pollution Measurements, PP 239-246, 1985.

2. Jayanty, R. K. M., S. W. Cooper, C. E. Decker and D. J. von Lehmden, "Evaluation of Parts-Per-Billion (PPB) Organic Cylinder Gases for Use as Audits During Hazardous Waste Trial Burn Tests". J. Air Pollution Control Association, Vol. 39, November 1985.

3. Allen, J. M., C. K. Sokol, R. K. M. Jayanty and C. E. Decker, "Stability of Parts-Per-Billion Hazardous Organic Cylinder Gases and Performance Audit Results of Source Test and Ambient Air Measurement Systems -- Status Report #3". EPA-600/4-87-007, March 1987.

APPENDIX A

STABILITY STUDY FOR GROUP I COMPOUNDS

STABILITY STUDY FOR GROUP II COMPOUNDS

STABILITY STUDY FOR GROUP III COMPOUNDS

STABILITY STUDY FOR GROUP IV COMPOUNDS

STABILITY STUDY FOR GROUP V COMPOUNDS

STABILITY STUDY FOR GROUP I COMPOUNDS***
CYLINDER I-C1

ACTIVITY	COMPOUND				
	Carbon tetrachloride	Chloroform	Perchloroethylene	Benzene	Vinyl Chloride
MANUFACTURER ANALYSIS					
Theoretical PPB	(305)	(302)	(305)	(305)	---
1st Analysis Date	10/13/83	10/13/83	10/13/83	11/15/83	11/15/83
PPB	(300)	(220)	(317)	(269)	(310)
2nd Analysis Date	12/14/83	12/14/83	12/14/83	12/12/83	12/12/83
PPB	(269)	(253)	(298)	(282)	(314)
RTI ANALYSIS**					
1st RTI Analysis Date	12/30/83	12/30/83	12/30/83	1/12/84	1/12/84
PPB	(283 ± 8.5)	(222 ± 4.7)	(373 ± 9.0)	(289 ± 9.2)	(325 ± 10.4)
2nd RTI Analysis Day*	62	62	62	62	62
PPB	(300 ± 9.0)	(228 ± 4.8)	(375 ± 9.0)	(287 ± 9.2)	(328 ± 10.5)
3rd RTI Analysis Day*	241	241	241	235	235
PPB	(277 ± 8.3)	(221 ± 4.6)	(347 ± 8.3)	(304 ± 9.7)	(325 ± 10.4)
4th RTI Analysis Day*	404	404	404	378	378
PPB	(277 ± 8.3)	(224 ± 4.7)	(356 ± 8.5)	(286 ± 9.2)	(334 ± 10.7)
5th RTI Analysis Day*					
PPB	on audit	on audit	on audit	(302 ± 9.7)	(319 ± 10.2)
6th RTI Analysis Day*	833	833	833	810	810
PPB	(279 ± 8.3)	(220 ± 4.7)	(359 ± 8.8)	(297 ± 9.6)	(338 ± 11.1)
7th RTI Analysis Day*					
PPB	on audit	on audit	on audit	on audit	on audit
RTI QUALITY CONTROL**					
1st RTI Analysis Date					
PPB	NA	NA	NA	NA	NA
NBS Concentration					
PPB	(155 ± 3.0)	(134 ± 3.0)	(146 ± 3.0)	(192 ± 4.0)	(192 ± 4.0)

(Continued)

STABILITY STUDY FOR GROUP I COMPOUNDS*** (Continued)
CYLINDER I-C1

ACTIVITY	COMPOUND				
	Carbon tetra-chloride	Chloroform	Perchloro-ethylene	Benzene	Vinyl Chloride
RTI QUALITY CONTROL**					
2nd RTI Analysis Day	62	62	62	62	62
PPB	(164 ± 4.9)	(130 ± 2.7)	(151 ± 3.6)	(192 ± 6.1)	(192 ± 6.1)
NBS Concentration PPB	(155 ± 3.0)	(134 ± 3.0)	(146 ± 3.0)	(192 ± 4.0)	(192 ± 4.0)
3rd RTI Analysis Day	241	241	241	235	235
PPB	(156 ± 4.7)	(132 ± 2.8)	(147 ± 3.5)	(191 ± 6.1)	(191 ± 6.1)
NBS Concentration PPB	(155 ± 3.0)	(134 ± 3.0)	(146 ± 3.0)	(192 ± 4.0)	(192 ± 4.0)
4th RTI Analysis Day	404	404	404	378	378
PPB	(156 ± 4.7)	(128 ± 2.7)	(143 ± 3.4)	(200 ± 6.4)	(195 ± 6.2)
NBS Concentration PPB	(155 ± 3.0)	(134 ± 3.0)	(146 ± 3.0)	(192 ± 4.0)	(192 ± 4.0)
5th RTI Analysis Day	500	500	500	505	505
PPB	(141 ± 4.2)	(115 ± 2.4)	(128 ± 3.1)	(139 ± 4.4)	(149 ± 4.8)
NBS Concentration PPB	(141 ± 3.0)	(115 ± 3.0)	(128 ± 3.0)	(133 ± 3.0)	(154 ± 3.0)
6th RTI Analysis Day	833	833	833	810	810
PPB	(166 ± 5.0)	(130 ± 2.7)	(144 ± 3.5)	(143 ± 4.6)	(156 ± 5.1)
NBS Concentration PPB	(155 ± 3.0)	(134 ± 3.0)	(146 ± 3.0)	(133 ± 3.0)	(154 ± 3.0)
7th RTI Analysis Day	1350	1350	1350	1350	1350
PPB	(154 ± 3.0)	(131 ± 2.4)	(146 ± 3.0)	(191 ± 6.0)	(191 ± 4.0)
NBS Concentration PPB	(155 ± 5.0)	(134 ± 5.0)	(146 ± 3.0)	(192 ± 3.0)	(190 ± 3.0)

*Number of days after 1st RTI analysis date.

**A different NBS standard was analyzed as internal quality control on each day of RTI analysis.

***A NBS primary standard was used for calibration for 7th RTI Analysis. Permeation tubes were used for calibration for all previous analyes.

****Seventh analysis was performed by automated cryogenic preconcentration with cryofocusing followed by GC/FID. Previous analysis were performed by direct injection.

STABILITY STUDY FOR GROUP I COMPOUNDS***
CYLINDER I-C2

ACTIVITY	COMPOUND				
	Carbon tetra-chloride	Chloroform	Perchloro-ethylene	Benzene	Vinyl Chloride
MANUFACTURER ANALYSIS					
Theoretical PPB	(319)	(316)	(319)	(319)	---
1st Analysis Date	10/13/83	10/13/83	10/13/83	12/12/83	12/12/83
PPB	(301)	(243)	(356)	(317)	(292)
2nd Analysis Date	12/14/83	12/14/83	12/14/83	12/14/83	12/14/83
PPB	(295)	(258)	(342)	(294)	(293)
RTI ANALYSIS****					
1st RTI Analysis Date	12/30/83	12/30/83	12/30/83	1/12/84	1/12/84
PPB	(315 ± 9.5)	(226 ± 4.7)	(425 ± 10.2)	(305 ± 9.8)	(295 ± 9.4)
2nd RTI Analysis Day*	62	62	62	62	62
PPB	(327 ± 9.8)	(233 ± 4.9)	(436 ± 10.5)	(314 ± 10.0)	(303 ± 9.7)
3rd RTI Analysis Day*	241	241	241	235	235
PPB	(305 ± 9.2)	(230 ± 4.8)	(406 ± 9.7)	(326 ± 10.4)	(304 ± 9.7)
4th RTI Analysis Day*	404	404	404	378	378
PPB	(305 ± 9.2)	(229 ± 4.8)	(407 ± 9.8)	(313 ± 10.0)	(309 ± 9.9)
5th RTI Analysis Day*	500	500	500	502	502
PPB	(306 ± 9.2)	(223 ± 4.7)	(398 ± 9.6)	(325 ± 10.4)	(308 ± 9.9)
6th RTI Analysis Day*					
PPB	on audit	on audit	on audit	on audit	on audit
7th RTI Analysis Day*	1350	1350	1350	1350	1350
PPB	(320 ± 22.3)	(227 ± 9.0)	(400 ± 19)	(305 ± 26.5)	(318 ± 30.6)
RTI QUALITY CONTROL**					
1st RTI Analysis Date					
PPB	NA	NA	NA	NA	NA
NBS Concentration					
PPB	(155 ± 3.0)	(134 ± 3.0)	(146 ± 3.0)	(192 ± 4.0)	(192 ± 4.0)

(Continued)

STABILITY STUDY FOR GROUP I COMPOUNDS*** (Continued)
CYLINDER I-C2

ACTIVITY	COMPOUND				
	Carbon tetrachloride	Chloroform	Perchloroethylene	Benzene	Vinyl Chloride
RTI QUALITY CONTROL**					
2nd RTI Analysis Day	62	62	62	62	62
PPB	(164 ± 4.9)	(130 ± 2.7)	(151 ± 3.6)	(192 ± 6.1)	(192 ± 6.1)
NBS Concentration PPB	(155 ± 3.0)	(134 ± 3.0)	(146 ± 3.0)	(192 ± 4.0)	(192 ± 4.0)
3rd RTI Analysis Day	241	241	241	235	235
PPB	(156 ± 4.7)	(132 ± 2.8)	(147 ± 3.5)	(191 ± 6.1)	(191 ± 6.1)
NBS Concentration PPB	(155 ± 3.0)	(134 ± 3.0)	(146 ± 3.0)	(192 ± 4.0)	(192 ± 4.0)
4th RTI Analysis Day	404	404	404	378	378
PPB	(156 ± 4.7)	(128 ± 2.7)	(143 ± 3.4)	(200 ± 6.4)	(195 ± 6.2)
NBS Concentration PPB	(155 ± 3.0)	(134 ± 3.0)	(146 ± 3.0)	(192 ± 4.0)	(192 ± 4.0)
5th RTI Analysis Day	500	500	500	502	502
PPB	(141 ± 4.2)	(115 ± 2.4)	(128 ± 3.1)	(137 ± 4.4)	(145 ± 4.6)
NBS Concentration PPB	(141 ± 3.0)	(115 ± 3.0)	(128 ± 3.0)	(133 ± 3.0)	(154 ± 3.0)
6th RTI Analysis Day	833	833	833	810	810
PPB	(166 ± 5.0)	(130 ± 2.7)	(144 ± 3.5)	(143 ± 4.6)	(156 ± 5.1)
NBS Concentration PPB	(155 ± 3.0)	(134 ± 3.0)	(146 ± 3.0)	(133 ± 3.0)	(154 ± 3.0)
7th RTI Analysis Day	1350	1350	1350	1350	1350
PPB	(154 ± 3.0)	(131 ± 2.4)	(146 ± 3.0)	(191 ± 6.0)	(191 ± 4.0)
NBS Concentration PPB	(155 ± 5.0)	(134 ± 5.0)	(146 ± 3.0)	(192 ± 3.0)	(190 ± 3.0)

*Number of days after 1st RTI analysis date.

**A different NBS standard was analyzed as internal quality control on each day of RTI analysis.

***A NBS primary standard was used for calibration for 7th RTI Analysis. Permeation tubes were used for calibration for all previous analyes.

****Seventh analysis was performed by automated cryogenic preconcentration with cryofocusing followed by GC/FID. Previous analysis were performed by direct injection.

STABILITY STUDY FOR GROUP I COMPOUNDS***
CYLINDER I-C3

ACTIVITY	COMPOUND				
	Carbon tetra-chloride	Chloroform	Perchloro-ethylene	Benzene	Vinyl Chloride
MANUFACTURER ANALYSIS					
Theoretical PPB	(294)	(291)	(293)	(294)	(290)
1st Analysis Date PPB	10/13/83 (308)	10/13/83 (223)	10/13/83 (321)	11/15/83 (271)	11/15/83 (287)
2nd Analysis Date PPB	12/14/83 (272)	12/14/83 (256)	12/14/83 (299)	12/12/83 (284)	12/12/83 (290)
RTI ANALYSIS****					
1st RTI Analysis Date PPB	12/30/83 (287 ± 8.6)	12/30/83 (224 ± 4.7)	12/30/83 (373 ± 9.0)	1/12/84 (288 ± 9.2)	1/12/84 (295 ± 9.4)
2nd RTI Analysis Day* PPB	62 (303 ± 9.1)	62 (234 ± 4.9)	62 (369 ± 8.9)	62 (289 ± 9.2)	62 (302 ± 9.7)
3rd RTI Analysis Day* PPB	241 (283 ± 8.5)	241 (230 ± 4.8)	241 (352 ± 8.4)	235 (300 ± 9.6)	235 (306 ± 9.8)
4th RTI Analysis Day* PPB	404 (280 ± 8.4)	404 (229 ± 4.8)	404 (354 ± 8.5)	378 (289 ± 9.2)	378 (308 ± 9.9)
5th RTI Analysis Day* PPB	500 (281 ± 8.4)	500 (223 ± 4.7)	500 (347 ± 8.3)	502 (302 ± 9.7)	502 (308 ± 9.9)
6th RTI Analysis Day* PPB	833 (291 ± 8.7)	833 (232 ± 4.9)	833 (365 ± 9.0)	810 (300 ± 9.7)	810 (312 ± 10.2)
7th RTI Analysis Day* PPB	on audit	on audit	on audit	on audit	on audit
RTI QUALITY CONTROL**					
1st RTI Analysis Date PPB	NA	NA	NA	NA	NA
NBS Concentration PPB	(155 ± 3.0)	(134 ± 3.0)	(146 ± 3.0)	(192 ± 4.0)	(192 ± 4.0)

(Continued)

STABILITY STUDY FOR GROUP I COMPOUNDS*** (Continued)
CYLINDER I-C3

ACTIVITY	COMPOUND				
	Carbon tetrachloride	Chloroform	Perchloroethylene	Benzene	Vinyl Chloride
RTI QUALITY CONTROL**					
2nd RTI Analysis Day	62	62	62	62	62
PPB	(164 ± 4.9)	(130 ± 2.7)	(151 ± 3.6)	(192 ± 6.1)	(192 ± 6.1)
NBS Concentration PPB	(155 ± 3.0)	(134 ± 3.0)	(146 ± 3.0)	(192 ± 4.0)	(192 ± 4.0)
3rd RTI Analysis Day	241	241	241	235	235
PPB	(156 ± 4.7)	(132 ± 2.8)	(147 ± 3.5)	(191 ± 6.1)	(191 ± 6.1)
NBS Concentration PPB	(155 ± 3.0)	(134 ± 3.0)	(146 ± 3.0)	(192 ± 4.0)	(192 ± 4.0)
4th RTI Analysis Day	404	404	404	378	378
PPB	(156 ± 4.7)	(128 ± 2.7)	(143 ± 3.4)	(200 ± 6.4)	(195 ± 6.2)
NBS Concentration PPB	(155 ± 3.0)	(134 ± 3.0)	(146 ± 3.0)	(192 ± 4.0)	(192 ± 4.0)
5th RTI Analysis Day	500	500	500	502	502
PPB	(141 ± 4.2)	(115 ± 2.4)	(128 ± 3.1)	(137 ± 4.4)	(145 ± 4.6)
NBS Concentration PPB	(141 ± 3.0)	(115 ± 3.0)	(128 ± 3.0)	(133 ± 3.0)	(154 ± 3.0)
6th RTI Analysis Day	833	833	833	810	810
PPB	(166 ± 5.0)	(130 ± 2.7)	(144 ± 3.5)	(143 ± 4.6)	(156 ± 5.1)
NBS Concentration PPB	(155 ± 3.0)	(134 ± 3.0)	(146 ± 3.0)	(133 ± 3.0)	(154 ± 3.0)
7th RTI Analysis Day	1350	1350	1350	1350	1350
PPB	(154 ± 3.0)	(131 ± 2.4)	(146 ± 3.0)	(191 ± 6.0)	(191 ± 4.0)
NBS Concentration PPB	(155 ± 5.0)	(134 ± 5.0)	(146 ± 3.0)	(192 ± 3.0)	(190 ± 3.0)

*Number of days after 1st RTI analysis date.

**A different NBS standard was analyzed as internal quality control on each day of RTI analysis.

***A NBS primary standard was used for calibration for 7th RTI Analysis. Permeation tubes were used for calibration for all previous analyes.

****Seventh analysis was performed by automated cryogenic preconcentration with cryofocusing followed by GC/FID. Previous analysis were performed by direct injection.

STABILITY STUDY FOR GROUP I COMPOUNDS***
CYLINDER I-C4

ACTIVITY	COMPOUND				
	Carbon tetrachloride	Chloroform	Perchloroethylene	Benzene	Vinyl Chloride
MANUFACTURER ANALYSIS					
Theoretical PPB	(268)	(271)	(271)	(274)	-?-
1st Analysis Date	12/09/83	12/09/83	12/09/83	12/02/83	12/02/83
PPB	(267)	(232)	(281)	(248)	(283)
2nd Analysis Date	12/14/83	12/14/83	12/14/83	12/12/83	12/12/83
PPB	(256)	(241)	(259)	(262)	(287)
RTI ANALYSIS****					
1st RTI Analysis Date	12/30/83	12/30/83	12/30/83	1/12/84	1/12/84
PPB	(270 ± 8.1)	(211 ± 4.4)	(308 ± 7.4)	(263 ± 8.4)	(291 ± 9.3)
2nd RTI Analysis Day*	62	62	62	62	62
PPB	(278 ± 8.3)	(214 ± 4.5)	(317 ± 7.6)	(263 ± 8.4)	(296 ± 9.5)
3rd RTI Analysis Day*	241	241	241	235	235
PPB	(267 ± 8.0)	(214 ± 4.5)	(299 ± 7.2)	(281 ± 9.0)	(300 ± 9.6)
4th RTI Analysis Day*	404	404	404	378	378
PPB	(266 ± 8.0)	(216 ± 4.5)	(311 ± 7.5)	(266 ± 8.5)	(301 ± 9.6)
5th RTI Analysis Day*	500	500	500	502	502
PPB	(265 ± 8.0)	(208 ± 4.4)	(295 ± 7.1)	(277 ± 8.9)	(302 ± 9.7)
6th RTI Analysis Day*	on audit	on audit	on audit	on audit	on audit
PPB					
7th RTI Analysis Day*	1350	1350	1350	1350	1350
PPB	(261 ± 7.9)	(216 ± 4.6)	(289 ± 7.0)	(261 ± 8.1)	(289 ± 9.3)
RTI QUALITY CONTROL**					
1st RTI Analysis Date					
PPB	NA	NA	NA	NA	NA
NBS Concentration PPB	(155 ± 3.0)	(134 ± 3.0)	(146 ± 3.0)	(192 ± 4.0)	(192 ± 4.0)

(Continued)

STABILITY STUDY FOR GROUP I COMPOUNDS*** (Continued)
CYLINDER I-C4

ACTIVITY	COMPOUND				
	Carbon tetra-chloride	Chloroform	Perchloro-ethylene	Benzene	Vinyl Chloride
RTI QUALITY CONTROL**					
2nd RTI Analysis Day* PPB	62 (164 ± 4.9)	62 (130 ± 2.7)	62 (151 ± 3.6)	62 (192 ± 6.1)	62 (192 ± 6.1)
NBS Concentration PPB	(155 ± 3.0)	(134 ± 3.0)	(146 ± 3.0)	(192 ± 4.0)	(192 ± 4.0)
3rd RTI Analysis Day* PPB	241 (156 ± 4.7)	241 (132 ± 2.8)	241 (147 ± 3.5)	235 (191 ± 6.1)	235 (191 ± 6.1)
NBS Concentration PPB	(155 ± 3.0)	(134 ± 3.0)	(146 ± 3.0)	(192 ± 4.0)	(192 ± 4.0)
4th RTI Analysis Day* PPB	404 (156 ± 4.7)	404 (128 ± 2.7)	404 (143 ± 3.4)	378 (200 ± 6.4)	378 (195 ± 6.2)
NBS Concentration PPB	(155 ± 3.0)	(134 ± 3.0)	(146 ± 3.0)	(192 ± 4.0)	(192 ± 4.0)
5th RTI Analysis Day* PPB	500 (141 ± 4.2)	500 (115 ± 2.4)	500 (128 ± 3.1)	502 (137 ± 4.4)	502 (145 ± 4.6)
NBS Concentration PPB	(141 ± 3.0)	(115 ± 3.0)	(128 ± 3.0)	(133 ± 3.0)	(154 ± 3.0)
6th RTI Analysis Day* PPB	833 (161 ± 4.8)	833 (132 ± 2.8)	833 (148 ± 3.6)	810 (139 ± 4.5)	810 (153 ± 5.0)
NBS Concentration PPB	(155 ± 3.0)	(134 ± 3.0)	(146 ± 3.0)	(133 ± 3.0)	(154 ± 3.0)
7th RTI Analysis Day* PPB	1350 (154 ± 3.0)	1350 (131 ± 2.4)	1350 (146 ± 3.0)	1350 (191 ± 6.1)	1350 (191 ± 4.0)
NBS Concentration PPB	(155 ± 5.0)	(134 ± 5.0)	(146 ± 3.0)	(192 ± 3.0)	(190 ± 3.0)

*Number of days after 1st RTI analysis date.
**A different NBS standard was analyzed as internal quality control on each day of RTI analysis.
***A NBS primary standard was used for calibration for 7th RTI Analysis. Permeation tubes were used for calibration for all previous analyes.
****Seventh analysis was performed by automated cryogenic preconcentration with cryofocusing followed by GC/FID. Previous analysis were performed by direct injection.

STABILITY STUDY FOR GROUP I COMPOUNDS***
CYLINDER I-C5

ACTIVITY	COMPOUND				
	Carbon tetra-chloride	Chloroform	Perchloro-ethylene	Benzene	Vinyl Chloride
MANUFACTURER ANALYSIS					
Theoretical PPB	(133)	(132)	(133)	(134)	150
1st Analysis Date	10/31/83	10/31/83	10/31/83	11/16/83	11/16/83
PPB	(122)	(123)	(124)	(127)	(143)
2nd Analysis Date	12/10/83	12/10/83	12/10/83	12/13/83	12/13/83
PPB	(118)	(130)	(119)	(131)	(146)
RTI ANALYSIS****					
1st RTI Analysis Date	12/30/83	12/30/83	12/30/83	1/17/84	1/17/84
PPB	(133 ± 4.1)	(125 ± 2.6)	(138 ± 3.3)	(132 ± 4.2)	(154 ± 4.9)
2nd RTI Analysis Day*	62	62	62	54	54
PPB	(139 ± 4.2)	(130 ± 2.7)	(144 ± 3.5)	(139 ± 4.4)	(152 ± 4.9)
3rd RTI Analysis Day*	242	242	242	230	230
PPB	(132 ± 4.0)	(129 ± 2.7)	(136 ± 3.3)	(146 ± 4.7)	(153 ± 4.9)
4th RTI Analysis Day*	404	404	404	374	374
PPB	(124 ± 3.7)	(125 ± 2.6)	(135 ± 3.2)	(140 ± 4.5)	(154 ± 4.9)
5th RTI Analysis Day*	501	501	501	498	498
PPB	(132 ± 4.0)	(128 ± 2.7)	(137 ± 3.3)	(139 ± 4.4)	(154 ± 4.9)
6th RTI Analysis Day*	833	833	833	810	810
PPB	(137 ± 4.1)	(132 ± 2.8)	(142 ± 3.5)	(137 ± 4.4)	(149 ± 4.9)
7th RTI Analysis Day*	1350	1350	1350	1350	1350
PPB	(133 ± 4.0)	(132 ± 2.8)	(139 ± 3.4)	(134 ± 4.3)	(152 ± 5.0)
RTI QUALITY CONTROL**					
1st RTI Analysis Date	----	----	----	1/17/84	1/17/84
PPB	NA	NA	NA	(135)	(155)
NBS Concentration PPB	(155 ± 3.0)	(134 ± 3.0)	(146 ± 3.0)	(133 ± 3.0)	(154 ± 3.0)

(Continued)

STABILITY STUDY FOR GROUP I COMPOUNDS*** (Continued)
CYLINDER I-C5

ACTIVITY	COMPOUND				
	Carbon tetrachloride	Chloroform	Perchloroethylene	Benzene	Vinyl Chloride
RTI QUALITY CONTROL**					
2nd RTI Analysis Day	62	62	62	54	54
PPB	(164 ± 4.9)	(130 ± 2.7)	(151 ± 3.6)	(141 ± 4.5)	(153 ± 4.9)
NBS Concentration PPB	(155 ± 3.0)	(134 ± 3.0)	(146 ± 3.0)	(133 ± 3.0)	(154 ± 3.0)
3rd RTI Analysis Day	242	242	242	230	230
PPB	(157 ± 4.7)	(133 ± 2.8)	(144 ± 3.5)	(147 ± 4.7)	(153 ± 4.9)
NBS Concentration PPB	(155 ± 3.0)	(134 ± 3.0)	(146 ± 3.0)	(133 ± 3.0)	(154 ± 3.0)
4th RTI Analysis Day	404	404	404	374	374
PPB	(156 ± 4.7)	(128 ± 2.7)	(143 ± 3.4)	(147 ± 4.7)	(152 ± 4.9)
NBS Concentration PPB	(155 ± 3.0)	(134 ± 3.0)	(146 ± 3.0)	(192 ± 4.0)	(192 ± 4.0)
5th RTI Analysis Day	501	501	501	498	498
PPB	(142 ± 4.3)	(115 ± 2.4)	(126 ± 3.0)	(139 ± 4.4)	(154 ± 4.9)
NBS Concentration PPB	(141 ± 3.0)	(120 ± 3.0)	(126 ± 3.0)	(133 ± 3.0)	(154 ± 3.0)
6th RTI Analysis Day	833	833	833	810	810
PPB	(161 ± 4.8)	(132 ± 2.8)	(148 ± 3.6)	(139 ± 4.5)	(153 ± 5.0)
NBS Concentration PPB	(155 ± 3.0)	(134 ± 3.0)	(146 ± 3.0)	(133 ± 3.0)	(154 ± 3.0)
7th RTI Analysis Day	1350	1350	1350	1350	1350
PPB	(154 ± 3.0)	(131 ± 2.4)	(146 ± 3.0)	(191 ± 6.1)	(191 ± 4.0)
NBS Concentration PPB	(155 ± 5.0)	(134 ± 5.0)	(146 ± 3.0)	(192 ± 3.0)	(190 ± 3.0)

*Number of days after 1st RTI analysis date.
**A different NBS standard was analyzed as internal quality control on each day of RTI analysis.
***A NBS primary standard was used for calibration for 7th RTI Analysis. Permeation tubes were used for calibration for all previous analyes.
****Seventh analysis was performed by automated cryogenic preconcentration with cryofocusing followed by GC/FID. Previous analysis were performed by direct injection.

STABILITY STUDY FOR GROUP I COMPOUNDS***
CYLINDER I-C6

ACTIVITY	COMPOUND				
	Carbon tetra-chloride	Chloroform	Perchloro-ethylene	Benzene	Vinyl Chloride
MANUFACTURER ANALYSIS					
Theoretical PPB	(134)	(133)	(134)	(135)	(15)
1st Analysis Date	10/31/83	10/31/83	10/31/83	11/16/83	11/16/83
PPB	(126)	(126)	(128)	(128)	(142)
2nd Analysis Date	12/10/83	12/10/83	12/10/83	12/12/83	12/12/83
PPB	(115)	(129)	(114)	(133)	(143)
RTI ANALYSIS****					
1st RTI Analysis Date	12/30/83	12/30/83	12/30/83	1/17/84	1/17/84
PPB	(134 ± 4.0)	(124 ± 2.6)	(137 ± 3.3)	(136 ± 4.4)	(155 ± 5.0)
2nd RTI Analysis Day*	62	62	62	54	54
PPB	(137 ± 4.1)	(128 ± 2.7)	(140 ± 3.4)	(138 ± 4.4)	(150 ± 4.8)
3rd RTI Analysis Day*	242	242	242	230	230
PPB	(131 ± 3.9)	(129 ± 2.7)	(135 ± 3.2)	(147 ± 4.7)	(152 ± 4.9)
4th RTI Analysis Day*	404	404	404	374	374
PPB	(129 ± 3.9)	(126 ± 2.6)	(135 ± 3.2)	(140 ± 4.5)	(148 ± 4.7)
5th RTI Analysis Day*	501	501	501	498	498
PPB	(132 ± 4.0)	(128 ± 2.7)	(137 ± 3.3)	(138 ± 4.4)	(153 ± 4.9)
6th RTI Analysis Day*	833	833	833	810	810
PPB	(134 ± 4.0)	(129 ± 2.7)	(137 ± 3.4)	(139 ± 4.5)	(151 ± 4.9)
7th RTI Analysis Day*	1350	1350	1350	1350	1350
PPB	(133 ± 4.0)	(128 ± 2.7)	(135 ± 3.3)	(136 ± 4.3)	(154 ± 5.0)
RTI QUALITY CONTROL**					
1st RTI Analysis Date	----	----	----	1/17/84	1/17/84
PPB	NA	NA	NA	(135 ± 4.3)	(155 ± 5.0)
NBS Concentration PPB	(155 ± 3.0)	(134 ± 3.0)	(146 ± 3.0)	(133 ± 3.0)	(154 ± 3.0)

(Continued)

STABILITY STUDY FOR GROUP I COMPOUNDS*** (Continued)
CYLINDER I-C6

ACTIVITY	COMPOUND				
	Carbon tetra-chloride	Chloroform	Perchloro-ethylene	Benzene	Vinyl Chloride
RTI QUALITY CONTROL**					
2nd RTI Analysis Day	62	62	62	54	54
PPB	(164 ± 4.9)	(130 ± 2.7)	(151 ± 3.6)	(141 ± 4.5)	(153 ± 4.9)
NBS Concentration PPB	(155 ± 3.0)	(134 ± 3.0)	(146 ± 3.0)	(133 ± 3.0)	(154 ± 3.0)
3rd RTI Analysis Day	242	242	242	230	230
PPB	(157 ± 4.7)	(133 ± 2.8)	(144 ± 3.5)	(147 ± 4.7)	(153 ± 4.9
NBS Concentration PPB	(155 ± 3.0)	(134 ± 3.0)	(146 ± 3.0)	(133 ± 3.0)	(154 ± 3.0)
4th RTI Analysis Day	404	404	404	374	374
PPB	(156 ± 4.7)	(128 ± 2.7)	(143 ± 3.4)	(147 ± 4.7)	(152 ± 4.9)
NBS Concentration PPB	(155 ± 3.0)	(134 ± 3.0)	(146 ± 3.0)	(192 ± 4.0)	(192 ± 4.0)
5th RTI Analysis Day	501	501	501	498	498
PPB	(142 ± 4.3)	(115 ± 2.4)	(126 ± 3.0)	(139 ± 4.4)	(154 ± 4.9)
NBS Concentration PPB	(141 ± 3.0)	(120 ± 3.0)	(126 ± 3.0)	(133 ± 3.0)	(154 ± 3.0)
6th RTI Analysis Day	833	833	833	810	810
PPB	(161 ± 4.8)	(132 ± 2.8)	(148 ± 3.6)	(139 ± 4.5)	(153 ± 5.0)
NBS Concentration PPB	(155 ± 3.0)	(134 ± 3.0)	(146 ± 3.0)	(133 ± 3.0)	(154 ± 3.0)
7th RTI Analysis Day	1350	1350	1350	1350	1350
PPB	(154 ± 3.0)	(131 ± 2.4)	(146 ± 3.0)	(191 ± 6.1)	(191 ± 4.0)
NBS Concentration PPB	(155 ± 5.0)	(134 ± 5.0)	(146 ± 3.0)	(192 ± 3.0)	(190 ± 3.0)

*Number of days after 1st RTI analysis date.
**A different NBS standard was analyzed as internal quality control on each day of RTI analysis.
***A NBS primary standard was used for calibration for 7th RTI Analysis. Permeation tubes were used for calibration for all previous analyes.
****Seventh analysis was performed by automated cryogenic preconcentration with cryofocusing followed by GC/FID. Previous analysis were performed by direct injection.

STABILITY STUDY FOR GROUP I COMPOUNDS***
CYLINDER I-C7

ACTIVITY	COMPOUND				
	Carbon tetrachloride	Chloroform	Perchloroethylene	Benzene	Vinyl Chloride
MANUFACTURER ANALYSIS					
Theoretical PPB	(134)	(132)	(133)	(134)	(150)
1st Analysis Date	10/31/83	10/31/83	10/31/83	12/01/83	12/01/83
PPB	(122)	(124)	(124)	(127)	(146)
2nd Analysis Date	12/10/83	12/10/83	12/10/83	12/13/83	12/13/83
PPB	(117)	(126)	(113)	(131)	(143)
RTI ANALYSIS****					
1st RTI Analysis Date	12/30/83	12/30/83	12/30/83	1/17/84	1/17/84
PPB	(132 ± 4.0)	(125 ± 2.6)	(139 ± 3.3)	(132 ± 4.2)	(155 ± 5.0)
2nd RTI Analysis Day*	62	62	62	54	54
PPB	(135 ± 4.1)	(127 ± 2.7)	(142 ± 3.4)	(138 ± 4.4)	(152 ± 4.9)
3rd RTI Analysis Day*	242	242	242	230	230
PPB	(133 ± 4.0)	(129 ± 2.7)	(135 ± 3.2)	(145 ± 4.6)	(154 ± 4.9)
4th RTI Analysis Day*	404	404	404	374	374
PPB	(128 ± 3.8)	(125 ± 2.6)	(140 ± 3.4)	(141 ± 4.5)	(156 ± 5.0)
5th RTI Analysis Day*	501	501	501	498	498
PPB	(131 ± 3.9)	(125 ± 2.6)	(137 ± 3.3)	(137 ± 4.4)	(156 ± 5.0)
6th RTI Analysis Day*	833	833	833	810	810
PPB	(134 ± 4.0)	(129 ± 2.7)	(139 ± 3.4)	(137 ± 4.4)	(151 ± 4.9)
7th RTI Analysis Day*	on audit	on audit	on audit	on audit	on audit
PPB					
RTI QUALITY CONTROL**					
1st RTI Analysis Date	----	----	----	1/17/84	1/17/84
PPB	NA	NA	NA	(135 ± 4.3)	(155 ± 5.0)
NBS Concentration PPB	(155 ± 3.0)	(134 ± 3.0)	(146 ± 3.0)	(133 ± 3.0)	(154 ± 3.0)

(Continued)

STABILITY STUDY FOR GROUP I COMPOUNDS*** (Continued)
CYLINDER I-C7

ACTIVITY	COMPOUND				
	Carbon tetrachloride	Chloroform	Perchloroethylene	Benzene	Vinyl Chloride
RTI QUALITY CONTROL**					
2nd RTI Analysis Day	62	62	62	54	54
PPB	(164 ± 4.9)	(130 ± 2.7)	(151 ± 3.6)	(141 ± 4.5)	(153 ± 4.9)
NBS Concentration PPB	(155 ± 3.0)	(134 ± 3.0)	(146 ± 3.0)	(133 ± 3.0)	(154 ± 3.0)
3rd RTI Analysis Day	242	242	242	230	230
PPB	(157 ± 4.7)	(133 ± 2.8)	(144 ± 3.5)	(147 ± 4.7)	(153 ± 4.9)
NBS Concentration PPB	(155 ± 3.0)	(134 ± 3.0)	(146 ± 3.0)	(133 ± 3.0)	(154 ± 3.0)
4th RTI Analysis Day	404	404	404	374	374
PPB	(156 ± 4.7)	(128 ± 2.7)	(143 ± 3.4)	(147 ± 4.7)	(152 ± 4.9)
NBS Concentration PPB	(155 ± 3.0)	(134 ± 3.0)	(146 ± 3.0)	(192 ± 4.0)	(192 ± 4.0)
5th RTI Analysis Day	501	501	501	498	498
PPB	(142 ± 4.3)	(115 ± 2.40	(126 ± 3.0)	(139 ± 4.4)	(154 ± 4.9)
NBS Concentration PPB	(141 ± 3.0)	(120 ± 3.0)	(126 ± 3.0)	(133 ± 3.0)	(154 ± 3.0)
6th RTI Analysis Day	833	833	833	810	810
PPB	(161 ± 4.8)	(132 ± 2.8)	(148 ± 3.6)	(139 ± 4.5)	(153 ± 5.0)
NBS Concentration PPB	(155 ± 3.0)	(134 ± 3.0)	(146 ± 3.0)	(133 ± 3.0)	(154 ± 3.0)
7th RTI Analysis Day	1350	1350	1350	1350	1350
PPB	(154 ± 3.0)	(131 ± 2.4)	(146 ± 3.0)	(191 ± 6.1)	(191 ± 4.0)
NBS Concentration PPB	(155 ± 5.0)	(134 ± 5.0)	(146 ± 3.0)	(192 ± 3.0)	(190 ± 3.0)

*Number of days after 1st RTI analysis date.

**A different NBS standard was analyzed as internal quality control on each day of RTI analysis.

***A NBS primary standard was used for calibration for 7th RTI Analysis. Permeation tubes were used for calibration for all previous analyes.

****Seventh analysis was performed by automated cryogenic preconcentration with cryofocusing followed by GC/FID. Previous analysis were performed by direct injection.

STABILITY STUDY FOR GROUP I COMPOUNDS***
CYLINDER I-C8

ACTIVITY	COMPOUND				
	Carbon tetra-chloride	Chloroform	Perchloro-ethylene	Benzene	Vinyl Chloride
MANUFACTURER ANALYSIS					
Theoretical PPB	(128)	(126)	(127)	(128)	(150)
1st Analysis Date	10/31/83	10/31/83	10/31/83	11/16/83	11/16/83
PPB	(117)	(119)	(125)	(121)	(147)
2nd Analysis Date	12/10/83	12/10/83	12/10/83	12/13/83	12/13/83
PPB	(113)	(126)	(116)	(125)	(148)
RTI ANALYSIS**					
1st RTI Analysis Date	12/30/83	12/30/83	12/30/83	1/17/84	1/17/84
PPB	(127 ± 3.8)	(119 ± 2.5)	(131 ± 3.1)	(127 ± 4.1)	(158 ± 5.1)
2nd RTI Analysis Day*	62	62	62	54	54
PPB	(131 ± 3.9)	(122 ± 2.6)	(134 ± 3.2)	(133 ± 4.3)	(154 ± 4.9)
3rd RTI Analysis Day*	242	242	242	230	230
PPB	(127 ± 3.8)	(123 ± 2.6)	(129 ± 3.1)	(140 ± 4.5)	(153 ± 4.9)
4th RTI Analysis Day*	404	404	404	374	374
PPB	(124 ± 3.7)	(117 ± 2.5)	(131 ± 3.1)	(143 ± 4.6)	(154 ± 4.9)
5th RTI Analysis Day*					
PPB	on audit	on audit	on audit	on audit	on audit
6th RTI Analysis Day*	833	833	833	810	810
PPB	(129 ± 3.8)	(123 ± 2.6)	(131 ± 3.2)	(130 ± 4.2)	(153 ± 5.0)
7th RTI Analysis Day*	on audit	on audit	on audit	on audit	on audit
PPB					
RTI QUALITY CONTROL**					
1st RTI Analysis Date	----	----	----	1/17/84	1/17/84
PPB	NA	NA	NA	(135 ± 4.3)	(155 ± 5.0)
NBS Concentration					
PPB	(155 ± 3.0)	(134 ± 3.0)	(146 ± 3.0)	(133 ± 3.0)	(154 ± 3.0)

(Continued)

STABILITY STUDY FOR GROUP I COMPOUNDS*** (Continued)
CYLINDER I-C8

ACTIVITY	COMPOUND				
	Carbon tetrachloride	Chloroform	Perchloroethylene	Benzene	Vinyl Chloride
RTI QUALITY CONTROL**					
2nd RTI Analysis Day	62	62	62	54	54
PPB	(164 ± 4.9)	(130 ± 2.7)	(151 ± 3.6)	(141 ± 4.5)	(153 ± 4.9)
NBS Concentration PPB	(155 ± 3.0)	(134 ± 3.0)	(146 ± 3.0)	(133 ± 3.0)	(154 ± 3.0)
3rd RTI Analysis Day	242	242	242	230	230
PPB	(157 ± 4.7)	(133 ± 2.8)	(144 ± 3.5)	(147 ± 4.7)	(153 ± 4.9)
NBS Concentration PPB	(155 ± 3.0)	(134 ± 3.0)	(146 ± 3.0)	(133 ± 3.0)	(154 ± 3.0)
4th RTI Analysis Day	404	404	404	374	374
PPB	(156 ± 4.7)	(128 ± 2.7)	(143 ± 3.4)	(147 ± 4.7)	(152 ± 4.9)
NBS Concentration PPB	(155 ± 3.0)	(134 ± 3.0)	(146 ± 3.0)	(192 ± 4.0)	(192 ± 4.0)
5th RTI Analysis Day	501	501	501	498	498
PPB	(142 ± 4.3)	(115 ± 2.4)	(126 ± 3.0)	(139 ± 4.4)	(154 ± 4.9)
NBS Concentration PPB	(141 ± 3.0)	(120 ± 3.0)	(126 ± 3.0)	(133 ± 3.0)	(154 ± 3.0)
6th RTI Analysis Day	833	833	833	810	810
PPB	(161 ± 4.8	(132 ± 2.8)	(148 ± 3.6)	(139 ± 4.5)	(153 ± 5.0)
NBS Concentration PPB	(155 ± 3.0)	(134 ± 3.0)	(146 ± 3.0)	(133 ± 3.0)	(154 ± 3.0)
7th RTI Analysis Day	1350	1350	1350	1350	1350
PPB	(154 ± 3.0)	(131 ± 2.4)	(146 ± 3.0)	(191 ± 6.1)	(191 ± 4.0)
NBS Concentration PPB	(155 ± 5.0)	(134 ± 5.0)	(146 ± 3.0)	(192 ± 3.0)	(190 ± 3.0)

*Number of days after 1st RTI analysis date.

**A different NBS standard was analyzed as internal quality control on each day of RTI analysis.

***A NBS primary standard was used for calibration for 7th RTI Analysis. Permeation tubes were used for calibration for all previous analyes.

****Seventh analysis was performed by automated cryogenic preconcentration with cryofocusing followed by GC/FID. Previous analysis were performed by direct injection.

STABILITY STUDY FOR GROUP I COMPOUNDS***
CYLINDER I-C9

ACTIVITY	COMPOUND				
	Carbon tetrachloride	Chloroform	Perchloroethylene	Benzene	Vinyl Chloride
MANUFACTURER ANALYSIS					
Theoretical PPB	(70.8)	(70.0)	(70.6)	(71.0)	(70.0)
1st Analysis Date	10/25/83	10/25/83	10/25/83	11/28/83	11/28/83
PPB	(72.5)	(68.9)	(72.7)	(67.2)	(70.6)
2nd Analysis Date	12/12/83	12/12/83	12/12/83	12/13/83	12/13/83
PPB	(68.3)	(72.3)	(69.8)	(73.1)	(69.6)
RTI ANALYSIS****					
1st RTI Analysis Date	1/04/84	1/04/84	1/04/84	1/17/84	1/17/84
PPB	(72.8 ± 2.2)	(65.3 ± 1.4)	(74.6 ± 1.8)	(76.2 ± 2.4)	(72.9 ± 2.3)
2nd RTI Analysis Day*	58	58	58	51	51
PPB	(73.7 ± 2.2)	(68.6 ± 1.4)	(76.2 ± 1.8)	(73.2 ± 2.3)	(73.1 ± 2.3)
3rd RTI Analysis Day*					
PPB	on audit	on audit	on audit	on audit	on audit
4th RTI Analysis Day*					
PPB	on audit	on audit	on audit	on audit	on audit
5th RTI Analysis Day*	497	497	497	499	499
PPB	(71.7 ± 2.2)	(68.8 ± 1.4)	(71.6 ± 1.7)	(72.6 ± 2.3)	(71.0 ± 2.3)
6th RTI Analysis Day*	833	833	833	810	810
PPB	(79.6 ± 2.3)	(72.2 ± 1.5)	(79.6 ± 2.0)	(75.6 ± 2.4)	(69.3 ± 2.2)
7th RTI Analysis Day*					
PPB	on audit	on audit	on audit	on audit	on audit
RTI QUALITY CONTROL**					
1st RTI Analysis Date	1/04/84	1/04/84	1/04/84	1/17/84	1/17/84
PPB	(144 ± 4.3)	(114 ± 2.4)	(127 ± 3.0)	(135 ± 4.3)	(155 ± 5.0)
NBS Concentration					
PPB	(141 ± 3.0)	(120 ± 3.0)	(126 ± 3.0)	(133 ± 3.0)	(154 ± 3.0)

(Continued)

STABILITY STUDY FOR GROUP I COMPOUNDS*** (Continued)
CYLINDER I-C9

ACTIVITY	COMPOUND				
	Carbon tetrachloride	Chloroform	Perchloroethylene	Benzene	Vinyl Chloride
RTI QUALITY CONTROL**					
2nd RTI Analysis Day*	58	58	58	51	51
PPB	(147 ± 4.4)	(116 ± 2.4)	(134 ± 3.2)	(17.0 ± 0.5)	(15.0 ± 0.5)
NBS Concentration** PPB	(141 ± 3.0)	(120 ± 3.0)	(126 ± 3.0)	(17 ± 1.0)	(15 ± 1.0)
3rd RTI Analysis Day*	240	240	240	231	231
PPB	(146 ± 4.4)	(120 ± 2.5)	(131 ± 3.1)	(146 ± 4.7)	(152 ± 4.9)
NBS Concentration PPB	(141 ± 3.0)	(120 ± 3.0)	(126 ± 3.0)	(133 ± 3.0)	(154 ± 3.0)
4th RTI Analysis Day*	401	401	401	377	377
PPB	(142 ± 4.3)	(120 ± 2.5)	(127 ± 3.0)	(136 ± 4.4)	(150 ± 4.8)
NBS Concentration PPB	(141 ± 3.0)	(120 ± 3.0)	(126 ± 3.0)	(133 ± 3.0)	(154 ± 3.0)
5th RTI Analysis Day*	497	497	497	499	499
PPB	(141 ± 4.2)	(1I6 ± 2.4)	(129 ± 3.1)	(136 ± 4.4)	(149 ± 4.8)
NBS Concentration PPB	(141 ± 3.0)	(120 ± 3.0)	(126 ± 3.0)	(133 ± 3.0)	(154 ± 3.0)
6th RTI Analysis Day*	833	833	833	810	810
PPB	(144 ± 4.3)	(119 ± 2.5)	(135 ± 3.3)	(139 ± 4.5)	(153 ± 5.0)
NBS Concentration** PPB	(141 ± 3.0)	(120 ± 3.0)	(126 ± 3.0)	(133 ± 3.0)	(154 ± 3.0)
7th RTI Analysis Day*	1350	1350	1350	1350	1350
PPB	(154 ± 3.0)	(131 ± 2.4)	(146 ± 3.0)	(191 ± 6.1)	(191 ± 4.0)
NBS Concentration PPB	(155 ± 5.0)	(134 ± 5.0)	(146 ± 3.0)	(192 ± 3.0)	(190 ± 3.0)

*Number of days after lst RTI analysis date.

**A different NBS standard was analyzed as internal quality control on each day of RTI analysis.

***A NBS primary standard was used for calibration for 7th RTI Analysis. Permeation tubes were used for calibration for all previous analyes.

****Seventh analysis was performed by automated cryogenic preconcentration with cryofocusing followed by GC/FID. Previous analysis were performed by direct injection.

STABILITY STUDY FOR GROUP I COMPOUNDS***
CYLINDER I-C10

ACTIVITY	COMPOUND				
	Carbon tetra-chloride	Chloroform	Perchloro-ethylene	Benzene	Vinyl Chloride
MANUFACTURER ANALYSIS					
Theoretical PPB	(66.0)	(65.2)	(65.8)	(66.2)	(70.0)
1st Analysis Date	10/25/83	10/25/83	10/25/83	11/28/83	11/28/83
PPB	(65.2)	(64.8)	(67.9)	(61.0)	(70.1)
2nd Analysis Date	12/12/83	12/12/83	12/12/83	12/13/83	12/13/83
PPB	(62.5)	(66.1)	(64.6)	(66.0)	(67.5)
RTI ANALYSIS****					
1st RTI Analysis Date	1/04/84	1/04/84	1/04/84	1/17/84	1/17/84
PPB	(66.5 ± 2.0)	(58.6 ± 1.2)	(67.7 ± 1.6)	(68.7 ± 2.2)	(71.3 ± 2.3)
2nd RTI Analysis Day*	58	58	58	51	51
PPB	(65.8 ± 2.0)	(60.6 ± 1.3)	(68.4 ± 1.6)	(66.4 ± 2.1)	(71.5 ± 2.3)
3rd RTI Analysis Day*	240	240	240	231	231
PPB	(67.6 ± 2.0)	(64.6 ± 1.4)	(69.4 ± 1.7)	(72.0 ± 2.3)	(71.6 ± 2.3)
4th RTI Analysis Day*	401	401	401	377	377
PPB	(65.2 ± 2.0)	(63.6 ± 1.3)	(71.7 ± 1.7)	(70.4 ± 2.3)	(68.5 ± 2.2)
5th RTI Analysis Day*	497	497	497	499	499
PPB	(64.0 ± 1.9)	(62.7 ± 1.3)	(64.3 ± 1.5)	(66.0 ± 2.1)	(69.0 ± 2.2)
6th RTI Analysis Day*	833	833	833	810	810
PPB	(70.0 ± 2.1)	(64.3 ± 1.4)	(72.3 ± 1.8)	(68.2 ± 2.2)	(71.7 ± 2.3)
7th RTI Analysis Day*	on audit	on audit	on audit	on audit	on audit
PPB					
RTI QUALITY CONTROL**					
1st RTI Analysis Date	1/04/84	1/04/84	1/04/84	1/17/84	1/17/84
PPB	(144 ± 4.3)	(114 ± 2.4)	(127 ± 3.0)	(135 ± 4.3)	(155 ± 5.0)
NBS Concentration PPB	(141 ± 3.0)	(120 ± 3.0)	(126 ± 3.0)	(133 ± 3.0)	(154 ± 3.0)

(Continued)

STABILITY STUDY FOR GROUP I COMPOUNDS*** (Continued)
CYLINDER I-C10

ACTIVITY	COMPOUND				
	Carbon tetrachloride	Chloroform	Perchloroethylene	Benzene	Vinyl Chloride
RTI QUALITY CONTROL**					
2nd RTI Analysis Day	58	58	58	51	51
PPB	(147 ± 4.4)	(116 ± 2.4)	(134 ± 3.2)	(17.0 ± 0.5)	(15.0 ± 0.5)
NBS Concentration**					
PPB	(141 ± 3.0)	(120 ± 3.0)	(126 ± 3.0)	(17 ± 1.0)	(15 ± 1.0)
3rd RTI Analysis Day	240	240	240	231	231
PPB	(146 ± 4.4)	(120 ± 2.5)	(131 ± 3.1)	(146 ± 4.7)	(152 ± 4.9)
NBS Concentration					
PPB	(141 ± 3.0)	(120 ± 3.0)	(126 ± 3.0)	(133 ± 3.0)	(154 ± 3.0)
4th RTI Analysis Day	401	401	401	377	377
PPB	(142 ± 4.3)	(120 ± 2.5)	(127 ± 3.0)	(136 ± 4.4)	(150 ± 4.8)
NBS Concentration					
PPB	(141 ± 3.0)	(120 ± 3.0)	(126 ± 3.0)	(133 ± 3.0)	(154 ± 3.0)
5th RTI Analysis Day	497	497	497	499	499
PPB	(141 ± 4.2)	(116 ± 2.4)	(129 ± 3.1)	(136 ± 4.4)	(149 ± 4.8)
NBS Concentration					
PPB	(141 ± 3.0)	(120 ± 3.0)	(126 ± 3.0)	(133 ± 3.0)	(154 ± 3.0)
6th RTI Analysis Day	833	833	833	810	810
PPB	(144 ± 4.3)	(119 ± 2.5)	(135 ± 3.3)	(139 ± 4.5)	(153 ± 5.0)
NBS Concentration**					
PPB	(141 ± 3.0)	(120 ± 3.0)	(126 ± 3.0)	(133 ± 3.0)	(154 ± 3.0)
7th RTI Analysis Day	1350	1350	1350	1350	1350
PPB	(154 ± 3.0)	(131 ± 2.4)	(146 ± 3.0)	(191 ± 6.1)	(191 ± 4.0)
NBS Concentration					
PPB	(155 ± 5.0)	(134 ± 5.0)	(146 ± 3.0)	(192 ± 3.0)	(190 ± 3.0)

*Number of days after 1st RTI analysis date.

**A different NBS standard was analyzed as internal quality control on each day of RTI analysis.

***A NBS primary standard was used for calibration for 7th RTI Analysis. Permeation tubes were used for calibration for all previous analyes.

****Seventh analysis was performed by automated cryogenic preconcentration with cryofocusing followed by GC/FID. Previous analysis were performed by direct injection.

STABILITY STUDY FOR GROUP I COMPOUNDS***
CYLINDER I-C11

ACTIVITY	COMPOUND				
	Carbon tetra-chloride	Chloroform	Perchloro-ethylene	Benzene	Vinyl Chloride
MANUFACTURER ANALYSIS					
Theoretical PPB	(66.6)	(65.8)	(66.3)	(66.7)	(70.0)
1st Analysis Date	10/25/83	10/25/83	10/25/83	12/02/83	12/02/83
PPB	(65.4)	(62.4)	(65.5)	(61.7)	(66.5)
2nd Analysis Date	12/12/83	12/12/83	12/12/83	12/13/83	12/13/83
PPB	(62.3)	(65.1)	(64.8)	(65.3)	(67.7)
RTI ANALYSIS****					
1st RTI Analysis Date	1/04/84	1/04/84	1/04/84	1/17/84	1/17/84
PPB	(66.5 ± 2.0)	(58.1 ± 1.2)	(66.4 ± 1.6)	(67.4 ± 2.2)	(69.7 ± 2.2)
2nd RTI Analysis Day*	58	58	58	51	51
PPB	(67.5 ± 2.0)	(60.5 ± 1.3)	(70.0 ± 1.7)	(64.8 ± 2.1)	(69.2 ± 2.2)
3rd RTI Analysis Day*	240	240	240	231	231
PPB	(68.2 ± 2.0)	(64.6 ± 1.4)	(69.6 ± 1.7)	(71.1 ± 2.3)	(69.8 ± 2.2)
4th RTI Analysis Day*	401	401	401	377	377
PPB	(65.2 ± 2.0)	(63.6 ± 1.3)	(71.7 ± 1.7)	(70.4 ± 2.3)	(68.5 ± 2.2)
5th RTI Analysis Day*	497	497	497	499	499
PPB	(65.3 ± 2.0)	(62.7 ± 1.3)	(63.5 ± 1.5)	(69.1 ± 2.2)	(68.7 ± 2.2)
6th RTI Analysis Day*	833	833	833	810	810
PPB	(70.8 ± 2.1)	(60.3 ± 1.3)	(70.1 ± 1.7)	(69.9 ± 2.2)	(69.3 ± 2.2)
7th RTI Analysis Day*	on audit	on audit	on audit	on audit	on audit
PPB					
RTI QUALITY CONTROL**					
1st RTI Analysis Date	1/04/84	1/04/84	1/04/84	1/17/84	1/17/84
PPB	(144 ± 4.3)	(114 ± 2.4)	(127 ± 3.0)	(135 ± 4.3)	(155 ± 5.0)
NBS Concentration PPB	(141 ± 3.0)	(120 ± 3.0)	(126 ± 3.0)	(133 ± 3.0)	(154 ± 3.0)

(Continued)

STABILITY STUDY FOR GROUP I COMPOUNDS*** (Continued)
CYLINDER I-C11

ACTIVITY	COMPOUND				
	Carbon tetrachloride	Chloroform	Perchloroethylene	Benzene	Vinyl Chloride
RTI QUALITY CONTROL**					
2nd RTI Analysis Day	58	58	58	51	51
PPB	(147 ± 4.4)	(116 ± 2.4)	(134 ± 3.2)	(17.0 ± 0.5)	(15.0 ± 0.5)
NBS Concentration**					
PPB	(141 ± 3.0)	(120 ± 3.0)	(126 ± 3.0)	(17.0 ± 1.0)**	(15.0 ± 1.0)**
3rd RTI Analysis Day	240	240	240	231	231
PPB	(146 ± 4.4)	(120 ± 2.5)	(131 ± 3.1)	(146 ± 4.7)	(152 ± 4.9)
NBS Concentration					
PPB	(141 ± 3.0)	(120 ± 3.0)	(126 ± 3.0)	(133 ± 3.0)	(154 ± 3.0)
4th RTI Analysis Day	401	401	401	377	377
PPB	(142 ± 4.3)	(120 ± 2.5)	(127 ± 3.0)	(136 ± 4.4)	(150 ± 4.8)
NBS Concentration					
PPB	(141 ± 3.0)	(120 ± 3.0)	(126 ± 3.0)	(133 ± 3.0)	(154 ± 3.0)
5th RTI Analysis Day	497	497	497	499	499
PPB	(141 ± 4.2)	(116 ± 2.4)	(129 ± 3.1)	(136 ± 4.4)	(149 ± 4.8)
NBS Concentration					
PPB	(141 ± 3.0)	(120 ± 3.0)	(126 ± 3.0)	(133 ± 3.0)	(154 ± 3.0)
6th RTI Analysis Day	833	833	833	810	810
PPB	(144 ± 4.3)	(119 ± 2.5)	(135 ± 3.3)	(139 ± 4.5)	(153 ± 5.0)
NBS Concentration**					
PPB	(141 ± 3.0)	(120 ± 3.0)	(126 ± 3.0)	(133 ± 3.0)	(154 ± 3.0)
7th RTI Analysis Day	1350	1350	1350	1350	1350
PPB	(154 ± 3.0)	(131 ± 2.4)	(146 ± 3.0)	(191 ± 6.1)	(191 ± 4.0)
NBS Concentration					
PPB	(155 ± 5.0)	(134 ± 5.0)	(146 ± 3.0)	(192 ± 3.0)	(190 ± 3.0)

*Number of days after 1st RTI analysis date.

**NBS primary standard was analyzed as internal quality control on each day of RTI analysis unless otherwise indicated. Several different NBS primary standards were used.

***A NBS primary standard was used for calibration for 7th RTI Analysis. Permeation tubes were used for calibration for all previous analyes.

****Seventh analysis was performed by automated cryogenic preconcentration with cryofocusing followed by GC/FID. Previous analysis were performed by direct injection.

STABILITY STUDY FOR GROUP I COMPOUNDS
CYLINDER I-C12

ACTIVITY	COMPOUND				
	Carbon tetrachloride	Chloroform	Perchloroethylene	Benzene	Vinyl Chloride
MANUFACTURER ANALYSIS					
Theoretical PPB	(75.3)	(74.4)	(75.1)	(75.6)	(70.0)
1st Analysis Date	10/31/83	10/31/83	10/31/83	11/28/83	11/28/83
PPB	(73.4)	(73.5)	(74.1)	(71.0)	(70.1)
2nd Analysis Date	12/12/83	12/12/83	12/12/83	12/13/83	12/13/83
PPB	(72.1)	(74.2)	(73.6)	(76.4)	(68.9)
RTI ANALYSIS					
1st RTI Analysis Date	1/04/84	1/04/84	1/04/84	1/17/84	1/17/84
PPB	(76.0 ± 2.3)	(70.7 ± 1.5)	(80.7 ± 1.9)	(79.0 ± 2.5)	(72.9 ± 2.3)
2nd RTI Analysis Day*	58	58	58	51	51
PPB	(77.0 ± 2.3)	(71.8 ± 1.5)	(80.4 ± 1.9)	(76.6 ± 2.5)	(72.1 ± 2.3)
3rd RTI Analysis Day*	240	240	240	231	231
PPB	(79.1 ± 2.4)	(75.3 ± 1.6)	(81.7 ± 2.0)	(82.3 ± 2.6)	(73.4 ± 2.3)
4th RTI Analysis Day*	401	401	401	377	377
PPB	(74.5 ± 2.2)	(72.6 ± 1.5)	(80.7 ± 1.9)	(79.0 ± 2.5)	(71.3 ± 2.3)
5th RTI Analysis Day*	497	497	497	499	499
PPB	(74.0 ± 2.2)	(70.9 ± 1.5)	(73.3 ± 1.8)	(74.6 ± 2.4)	(70.4 ± 2.3)
6th RTI Analysis Day*	empty	empty	empty	empty	empty
PPB					
RTI QUALITY CONTROL**					
1st RTI Analysis Date	1/04/84	1/04/84	1/04/84	1/17/84	1/17/84
PPB	(144 ± 4.3)	(114 ± 2.4)	(127 ± 3.0)	(135 ± 4.3)	(155 ± 5.0)
NBS Concentration PPB	(141 ± 3.0)	(120 ± 3.0)	(126 ± 3.0)	(133 ± 3.0)	(154 ± 3.0)

(Continued)

STABILITY STUDY FOR GROUP I COMPOUNDS (Continued)
CYLINDER I-C12

ACTIVITY	COMPOUND				
	Carbon tetrachloride	Chloroform	Perchloroethylene	Benzene	Vinyl Chloride
RTI QUALITY CONTROL**					
2nd RTI Analysis Day*	58	58	58	51	51
PPB	(147 ± 4.4)	(116 ± 2.4)	(134 ± 3.2)	(17.0 ± 0.5)	(15.0 ± 0.5)
NBS Concentration**					
PPB	(141 ± 3.0)	(120 ± 3.0)	(126 ± 3.0)	(17.0 ± 1.0)**	(15.0 ± 1.0)**
3rd RTI Analysis Day*	240	240	240	231	231
PPB	(146 ± 4.4)	(120 ± 2.5)	(131 ± 3.1)	(146 ± 4.7)	(152 ± 4.9)
NBS Concentration					
PPB	(141 ± 3.0)	(120 ± 3.0)	(126 ± 3.0)	(133 ± 3.0)	(154 ± 3.0)
4th RTI Analysis Day*	401	401	401	377	377
PPB	(142 ± 4.3)	(120 ± 2.5)	(127 ± 3.0)	(136 ± 4.4)	(150 ± 4.8)
NBS Concentration					
PPB	(141 ± 3.0)	(120 ± 3.0)	(126 ± 3.0)	(133 ± 3.0)	(154 ± 3.0)
5th RTI Analysis Day*	497	497	497	497	497
PPB	(141 ± 4.2)	(116 ± 2.4)	(129 ± 3.1)	(136 ± 4.4)	(149 ± 4.8)
NBS Concentration					
PPB	(141 ± 3.0)	(120 ± 3.0)	(126 ± 3.0)	(133 ± 3.0)	(154 ± 3.0)
6th RTI Analysis Day*	833	833	833	810	810
PPB	(144 ± 4.3)	(119 ± 2.5)	(135 ± 3.3)	(16.9 ± 0.5)	(14.7 ± 0.5)
NBS Concentration**					
PPB	(141 ± 3.0)	(120 ± 3.0)	(126 ± 3.0)	(17.0 ± 1.0)	(15.0 ± 1.0)

*Number of days after 1st RTI analysis date.

**NBS primary standard was analyzed as internal quality control on each day of RTI analysis unless otherwise indicated. Several different NBS primary standards were used.

***A NBS primary standard was used for calibration for 7th RTI Analysis. Permeation tubes were used for calibration for all previous analyes.

****Seventh analysis was performed by automated cryogenic preconcentration with cryofocusing followed by GC/FID. Previous analysis were performed by direct injection.

STABILITY STUDY FOR GROUP I COMPOUNDS***
CYLINDER I-C13

ACTIVITY	COMPOUND				
	Carbon tetra-chloride	Chloroform	Perchloro-ethylene	Benzene	Vinyl Chloride
MANUFACTURER ANALYSIS					
Theoretical PPB	(15.4)	(15.3)	(15.6)	(15.6)	(15.0)
1st Analysis Date	10/25/83	10/25/83	10/25/83	11/29/83	11/29/83
PPB	(12.4)	(13.6)	(12.7)	(10.8)	(13.6)
2nd Analysis Date	12/13/83	12/12/83	12/12/83	12/14/83	12/14/83
PPB	(11.5)	(11.9)	(11.6)	(11.3)	(14.3)
RTI ANALYSIS****					
1st RTI Analysis Date	1/05/84	1/05/84	1/05/84	1/23/84	1/23/84
PPB	(15.7 ± 0.5)	(14.6 ± 0.3)	(17.2 ± 0.4)	(16.2 ± 0.5)	(15.2 ± 0.5)
2nd RTI Analysis Day*	57	57	57	45	45
PPB	(16.2 ± 0.5)	(15.4 ± 0.3)	(17.2 ± 0.4)	(15.8 ± 0.5)	(16.1 ± 0.5)
3rd RTI Analysis Day	238	238	238	226	226
PPB	(15.7 ± 0.5)	(15.2 ± 0.3)	(15.7 ± 0.4)	(18.2 ± 0.6)	(15.4 ± 0.5)
4th RTI Analysis Day*	400	400	400	374	374
PPB	(15.2 ± 0.5)	(14.7 ± 0.3)	(16.0 ± 0.4)	(17.4 ± 0.6)	(14.4 ± 0.5)
5th RTI Analysis Day*	501	501	501	507	507
PPB	(15.4 ± 0.5)	(14.8 ± 0.3)	(15.9 ± 0.4)	(16.9 ± 0.5)	(15.4 ± 0.5)
6th RTI Analysis Day* PPB	on audit	on audit	on audit	on audit	on audit
7th RTI Analysis Day* PPB	on audit	on audit	on audit	on audit	on audit
RTI QUALITY CONTROL**					
1st RTI Analysis Date	1/05/84	1/05/84	1/05/84	1/23/84	1/23/84
PPB	(20.4 ± 0.6)	(22.8 ± 0.5)	(30.7 ± 0.7)	(17.5 ± 0.6)	(14.3 ± 0.5)
NBS Concentration PPB	(21.0 ± 1.0)	(23.0 ± 1.0)	(29.0 ± 1.0)	(17.0 ± 1.0)	(15.0 ± 1.0)

(Continued)

STABILITY STUDY FOR GROUP I COMPOUNDS*** (Continued)
CYLINDER I-C13

ACTIVITY	COMPOUND				
	Carbon tetrachloride	Chloroform	Perchloroethylene	Benzene	Vinyl Chloride
RTI QUALITY CONTROL**					
2nd RTI Analysis Day	57	57	57	45	45
PPB	(147 ± 4.4)	(116 ± 2.4)	(134 ± 3.2)	(16.8 ± 0.5)	(15.1 ± 0.8)
NBS Concentration**					
PPB	(141 ± 3.0)**	(120 ± 3.0)**	(126 ± 3.0)**	(17.0 ± 1.0)	(15.0 ± 1.0)
3rd RTI Analysis Day	238	238	238	226	226
PPB	(20.3 ± 0.6)	(23.6 ± 0.5)	(28.3 ± 0.7)	(19.0 ± 0.6)	(15.3 ± 0.5)
NBS Concentration					
PPB	(21.0 ± 1.0)	(23.0 ± 1.0)	(29.0 ± 1.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
4th RTI Analysis Day	400	400	400	374	374
PPB	(20.1 ± 0.6)	(22.7 ± 0.5)	(28.5 ± 0.7)	(18.4 ± 0.6)	(14.3 ± 0.5)
NBS Concentration					
PPB	(21.0 ± 1.0)	(23.0 ± 1.0)	(29.0 ± 2.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
5th RTI Analysis Day	501	501	501	507	507
PPB	(20.0 ± 0.6)	(22.8 ± 0.5)	(28.1 ± 0.7)	(18.2 ± 0.6)	(15.2 ± 0.5)
NBS Concentration					
PPB	(21.0 ± 1.0)	(23.0 ± 1.0)	(29.0 ± 2.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
6th RTI Analysis Day	833	833	833	810	810
PPB	(144 ± 4.3)	(119 ± 2.5)	(135 ± 3.3)	(16.9 ± 0.5)	(14.7 ± 0.5)
NBS Concentration**					
PPB	(141 ± 3.0)	(120 ± 3.0)	(126 ± 3.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
7th RTI Analysis Day	1350	1350	1350	1350	1350
PPB	(154 ± 3.0)	(131 ± 2.4)	(146 ± 3.0)	(191 ± 6.1)	(191 ± 4.0)
NBS Concentration					
PPB	(155 ± 5.0)	(134 ± 5.0)	(146 ± 3.0)	(192 ± 3.0)	(190 ± 3.0)

*Number of days after 1st RTI analysis date.

**A different NBS standard was analyzed as internal quality control on each day of RTI analysis.

***A NBS primary standard was used for calibration for 7th RTI Analysis. Permeation tubes were used for calibration for all previous analyes.

****Seventh analysis was performed by automated cryogenic preconcentration with cryofocusing followed by GC/FID. Previous analysis were performed by direct injection.

STABILITY STUDY FOR GROUP I COMPOUNDS***
CYLINDER I-C14

ACTIVITY	COMPOUND				
	Carbon tetra-chloride	Chloroform	Perchloro-ethylene	Benzene	Vinyl Chloride
MANUFACTURER ANALYSIS					
Theoretical PPB	(19.6)	(19.4)	(19.9)	(19.8)	(15.0)
1st Analysis Date	10/25/83	10/25/83	10/25/83	11/29/83	11/29/83
PPB	(16.2)	(15.9)	(15.7)	(13.8)	(14.0)
2nd Analysis Date	12/13/83	12/13/83	12/13/83	12/14/83	12/14/83
PPB	(15.2)	(15.2)	(14.5)	(14.5)	(14.4)
RTI ANALYSIS****					
1st RTI Analysis Date	1/05/84	1/05/84	1/05/84	1/23/84	1/23/84
PPB	(19.2 ± 0.6)	(18.4 ± 0.4)	(21.1 ± 0.5)	(20.8 ± 0.7)	(15.5 ± 0.5)
2nd RTI Analysis Day*	57	57	57	45	45
PPB	(20.0 ± 0.6)	(18.5 ± 0.4)	(21.2 ± 0.5)	(20.2 ± 0.6)	(15.6 ± 0.5)
3rd RTI Analysis Day*	238	238	238	226	226
PPB	(19.9 ± 0.6)	(19.1 ± 0.4)	(20.2 ± 0.5)	(22.0 ± 0.7)	(17.0 ± 0.5)
4th RTI Analysis Day*	400	400	400	374	374
PPB	(19.3 ± 0.6)	(18.3 ± 0.4)	(20.7 ± 0.5)	(20.6 ± 0.7)	(15.0 ± 0.5)
5th RTI Analysis Day*	501	501	501	507	507
PPB	(19.6 ± 0.6)	(18.1 ± 0.4)	(20.3 ± 0.5)	(21.2 ± 0.7)	(16.1 ± 0.5)
6th RTI Analysis Day*	833	833	833	810	810
PPB	(24.2 ± 0.7)	(21.6 ± 0.5)	(24.5 ± 0.6)	(21.7 ± 0.7)	(16.7 ± 0.5)
7th RTI Analysis Day*	on audit	on audit	on audit	on audit	on audit
PPB					
RTI QUALITY CONTROL**					
1st RTI Analysis Date	1/05/84	1/05/84	1/05/84	1/23/84	1/23/84
PPB	(20.4 ± 0.6)	(22.8 ± 0.5)	(30.7 ± 0.7)	(17.5 ± 0.6)	(14.3 ± 0.5)
NBS Concentration PPB	(21.0 ± 1.0)	(23.0 ± 1.0)	(29.0 ± 1.0)	(17.0 ± 1.0)	(15.0 ± 1.0)

(Continued)

STABILITY STUDY FOR GROUP I COMPOUNDS*** (Continued)
CYLINDER I-C14

ACTIVITY	COMPOUND				
	Carbon tetrachloride	Chloroform	Perchloroethylene	Benzene	Vinyl Chloride
RTI QUALITY CONTROL**					
2nd RTI Analysis Day	57	57	57	45	45
PPB	(147 ± 4.4)	(116 ± 2.4)	(134 ± 3.2)	(16.8 ± 0.5)	(15.1 ± 0.8)
NBS Concentration**					
PPB	(141 ± 3.0)**	(120 ± 3.0)**	(126 ± 3.0)**	(17.0 ± 1.0)	(15.0 ± 1.0)
3rd RTI Analysis Day	238	238	238	226	226
PPB	(20.3 ± 0.6)	(23.6 ± 0.5)	(28.3 ± 0.7)	(19.0 ± 0.6)	(15.3 ± 0.5)
NBS Concentration					
PPB	(21.0 ± 1.0)	(23.0 ± 1.0)	(29.0 ± 1.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
4th RTI Analysis Day	400	400	400	374	374
PPB	(20.1 ± 0.6)	(22.7 ± 0.5)	(28.5 ± 0.7)	(18.4 ± 0.6)	(14.3 ± 0.5)
NBS Concentration					
PPB	(21.0 ± 1.0)	(23.0 ± 1.0)	(29.0 ± 2.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
5th RTI Analysis Day	501	501	501	507	507
PPB	(20.0 ± 0.6)	(22.8 ± 0.5)	(28.1 ± 0.7)	(18.2 ± 0.6)	(15.2 ± 0.5)
NBS Concentration					
PPB	(21.0 ± 1.0)	(23.0 ± 1.0)	(29.0 ± 2.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
6th RTI Analysis Day	833	833	833	810	810
PPB	(144 ± 4.3)	(119 ± 2.5)	(135 ± 3.3)	(16.9 ± 0.5)	(14.7 ± 0.5)
NBS Concentration					
PPB	(141 ± 3.0)	(120 ± 3.0)	(126 ± 3.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
7th RTI Analysis Day	1350	1350	1350	1350	1350
PPB	(154 ± 3.0)	(131 ± 2.4)	(146 ± 3.0)	(191 ± 6.1)	(191 ± 4.0)
NBS Concentration					
PPB	(155 ± 5.0)	(134 ± 5.0)	(146 ± 3.0)	(192 ± 3.0)	(190 ± 3.0)

*Number of days after 1st RTI analysis date.

**A different NBS standard was analyzed as internal quality control on each day of RTI analysis.

***A NBS primary standard was used for calibration for 7th RTI Analysis. Permeation tubes were used for calibration for all previous analyes.

****Seventh analysis was performed by automated cryogenic preconcentration with cryofocusing followed by GC/FID. Previous analysis were performed by direct injection.

STABILITY STUDY FOR GROUP I COMPOUNDS***
CYLINDER I-C15

ACTIVITY	COMPOUND				
	Carbon tetrachloride	Chloroform	Perchloroethylene	Benzene	Vinyl Chloride
MANUFACTURER ANALYSIS					
Theoretical PPB	(18.1)	(17.9)	(18.3)	(18.3)	(15.0)
1st Analysis Date PPB	10/25/83 (14.0)	10/25/83 (14.3)	10/25/83 (13.8)	11/29/83 (11.9)	11/29/83 (13.8)
2nd Analysis Date PPB	12/13/83 (12.9)	12/13/83 (13.0)	12/13/83 (12.6)	12/14/83 (12.7)	12/14/83 (14.2)
RTI ANALYSIS**					
1st RTI Analysis Date PPB	1/05/84 (17.2 ± 0.5)	1/05/84 (16.2 ± 0.3)	1/05/84 (19.3 ± 0.5)	1/23/84 (18.1 ± 0.6)	1/23/84 (14.9 ± 0.5)
2nd RTI Analysis Day* PPB	57 (17.2 ± 0.5)	57 (16.7 ± 0.4)	57 (19.4 ± 0.5)	45 (17.5 ± 0.6)	45 (14.8 ± 0.5)
3rd RTI Analysis Day* PPB	238 (17.6 ± 0.5)	238 (17.0 ± 0.4)	238 (17.9 ± 0.4)	226 (19.8 ± 0.6)	226 (15.6 ± 0.5)
4th RTI Analysis Day* PPB	400 (17.0 ± 0.5)	400 (16.4 ± 0.3)	400 (18.3 ± 0.4)	374 (18.8 ± 0.6)	374 (14.9 ± 0.5)
5th RTI Analysis Day* PPB	501 (15.9 ± 0.5)	501 (16.4 ± 0.3)	501 (17.4 ± 0.4)	507 (18.6 ± 0.6)	507 (15.4 ± 0.5)
6th RTI Analysis Day* PPB	on audit	on audit	on audit	on audit	on audit
7th RTI Analysis Day*	on audit	on audit	on audit	on audit	on audit
RTI QUALITY CONTROL**					
1st RTI Analysis Date PPB	1/05/84 (20.4 ± 0.6)	1/05/84 (22.8 ± 0.5)	1/05/84 (30.7 ± 0.7)	1/23/84 (17.5 ± 0.6)	1/23/84 (14.3 ± 0.5)
NBS Concentration PPB	(21.0 ± 1.0)	(23.0 ± 1.0)	(29.0 ± 1.0)	(17.0 ± 1.0)	(15.0 ± 1.0)

(Continued)

STABILITY STUDY FOR GROUP I COMPOUNDS*** (Continued)
CYLINDER I-C15

ACTIVITY	COMPOUND				
	Carbon tetrachloride	Chloroform	Perchloroethylene	Benzene	Vinyl Chloride
RTI QUALITY CONTROL**					
2nd RTI Analysis Day	57	57	57	45	45
PPB	(147 ± 4.4)	(116 ± 2.4)	(134 ± 3.2)	(16.8 ± 0.5)	(15.1 ± 0.8)
NBS Concentration**					
PPB	(141 ± 3.0)**	(120 ± 3.0)**	(126 ± 3.0)**	(17.0 ± 1.0)	(15.0 ± 1.0)
3rd RTI Analysis Day	238	238	238	226	226
PPB	(20.3 ± 0.6)	(23.6 ± 0.5)	(28.3 ± 0.7)	(19.0 ± 0.6)	(15.3 ± 0.5)
NBS Concentration					
PPB	(21.0 ± 1.0)	(23.0 ± 1.0)	(29.0 ± 1.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
4th RTI Analysis Day	400	400	400	374	374
PPB	(20.1 ± 0.6)	(22.7 ± 0.5)	(28.5 ± 0.7)	(18.4 ± 0.6)	(14.3 ± 0.5)
NBS Concentration					
PPB	(21.0 ± 1.0)	(23.0 ± 1.0)	(29.0 ± 2.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
5th RTI Analysis Day	501	501	501	507	507
PPB	(20.0 ± 0.6)	(22.8 ± 0.5)	(28.1 ± 0.7)	(18.2 ± 0.6)	(15.2 ± 0.5)
NBS Concentration					
PPB	(21.0 ± 1.0)	(23.0 ± 1.0)	(29.0 ± 2.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
6th RTI Analysis Day	833	833	833	810	810
PPB	(144 ± 4.3)	(119 ± 2.5)	(135 ± 3.3)	(16.9 ± 0.5)	(14.7 ± 0.5)
NBS Concentration					
PPB	(141 ± 3.0)	(120 ± 3.0)	(126 ± 3.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
7th RTI Analysis Day	1350	1350	1350	1350	1350
PPB	(154 ± 3.0)	(131 ± 2.4)	(146 ± 3.0)	(191 ± 6.1)	(191 ± 4.0)
NBS Concentration					
PPB	(155 ± 5.0)	(134 ± 5.0)	(146 ± 3.0)	(192 ± 3.0)	(190 ± 3.0)

*Number of days after lst RTI analysis date.

**A different NBS standard was analyzed as internal quality control on each day of RTI analysis.

***A NBS primary standard was used for calibration for 7th RTI Analysis. Permeation tubes were used for calibration for all previous analyes.

****Seventh analysis was performed by automated cryogenic preconcentration with cryofocusing followed by GC/FID. Previous analysis were performed by direct injection.

STABILITY STUDY FOR GROUP I COMPOUNDS***
CYLINDER I-C16

ACTIVITY	COMPOUND				
	Carbon tetra-chloride	Chloroform	Perchloro-ethylene	Benzene	Vinyl Chloride
MANUFACTURER ANALYSIS					
Theoretical PPB	(20.9)	(20.7)	(21.2)	(21.2)	(15.0)
1st Analysis Date	11/11/83	11/11/83	11/11/83	11/29/83	11/29/83
PPB	(15.6)	(11.1)	(12.5)	(9.10)	(13.9)
2nd Analysis Date	12/13/83	12/13/83	12/13/83	12/14/83	12/14/83
PPB	(14.2)	(8.10)	(11.7)	(9.40)	(13.8)
RTI ANALYSIS****					
1st RTI Analysis Date	1/05/84	1/05/84	1/05/84	1/23/84	1/23/84
PPB	(17.9 ± 0.5)	(9.0 ± 0.2)	(16.5 ± 0.4)	(13.8 ± 0.4)	(14.9 ± 0.5)
2nd RTI Analysis Day*	57	57	57	45	45
PPB	(17.4 ± 0.5)	(7.9 ± 0.2)	(15.4 ± 0.4)	(13.2 ± 0.4)	(14.8 ± 0.5)
3rd RTI Analysis Day*	238	238	238	226	226
PPB	(16.2 ± 0.5)	(6.0 ± 0.1)	(14.6 ± 0.4)	(14.6 ± 0.5)	(15.8 ± 0.5)
4th RTI Analysis Day*	400	400	400	374	374
PPB	(14.9 ± 0.4)	(4.8 ± 0.1)	(14.6 ± 0.4)	(13.6 ± 0.4)	(12.3 ± 0.4)
5th RTI Analysis Day*	501	501	501	507	507
PPB	(14.5 ± 0.4)	(3.7 ± 0.1)	(14.2 ± 0.3)	(12.2 ± 0.4)	(11.6 ± 0.4)
6th RTI Analysis Day*	833	833	833	810	810
PPB	(15.4 ± 0.5)	(3.2 ± 0.1)	(16.1 ± 0.4)	(12.7 ± 0.4)	(13.2 ± 0.4)
7th RTI Analysis Day*	on audit	on audit	on audit	on audit	on audit
PPB					
RTI QUALITY CONTROL**					
1st RTI Analysis Date	1/05/84	1/05/84	1/05/84	1/23/84	1/23/84
PPB	(20.4 ± 0.6)	(22.8 ± 0.5)	(30.7 ± 0.7)	(17.5 ± 0.6)	(14.3 ± 0.5)
NBS Concentration PPB	(21.0 ± 1.0)	(23.0 ± 1.0)	(29.0 ± 1.0)	(17.0 ± 1.0)	(15.0 ± 1.0)

(Continued)

STABILITY STUDY FOR GROUP I COMPOUNDS*** (Continued)
CYLINDER I-C16

ACTIVITY	COMPOUND				
	Carbon tetrachloride	Chloroform	Perchloroethylene	Benzene	Vinyl Chloride
RTI QUALITY CONTROL**					
2nd RTI Analysis Day	57	57	57	45	45
PPB	(147 ± 4.4)	(116 ± 2.4)	(134 ± 3.2)	(16.8 ± 0.5)	(15.1 ± 0.8)
NBS Concentration**					
PPB	(141 ± 3.0)**	(120 ± 3.0)**	(126 ± 3.0)**	(17.0 ± 1.0)	(15.0 ± 1.0)
3rd RTI Analysis Day	238	238	238	226	226
PPB	(20.3 ± 0.6)	(23.6 ± 0.5)	(28.3 ± 0.7)	(19.0 ± 0.6)	(15.3 ± 0.5)
NBS Concentration					
PPB	(21.0 ± 1.0)	(23.0 ± 1.0)	(29.0 ± 1.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
4th RTI Analysis Day	400	400	400	374	374
PPB	(20.1 ± 0.6)	(22.7 ± 0.5)	(28.5 ± 0.7)	(18.4 ± 0.6)	(14.3 ± 0.5)
NBS Concentration					
PPB	(21.0 ± 1.0)	(23.0 ± 1.0)	(29.0 ± 2.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
5th RTI Analysis Day	501	501	501	507	507
PPB	(20.0 ± 0.6)	(22.8 ± 0.5)	(28.1 ± 0.7)	(18.2 ± 0.6)	(15.2 ± 0.5)
NBS Concentration					
PPB	(21.0 ± 1.0)	(23.0 ± 1.0)	(29.0 ± 2.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
6th RTI Analysis Day	833	833	833	810	810
PPB	(144 ± 4.3)	(119 ± 2.5)	(135 ± 3.3)	(16.9 ± 0.5)	(14.7 ± 0.5)
NBS Concentration					
PPB	(141 ± 3.0)	(120 ± 3.0)	(126 ± 3.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
7th RTI Analysis Day	1350	1350	1350	1350	1350
PPB	(154 ± 3.0)	(131 ± 2.4)	(146 ± 3.0)	(191 ± 6.1)	(191 ± 4.0)
NBS Concentration					
PPB	(155 ± 5.0)	(134 ± 5.0)	(146 ± 3.0)	(192 ± 3.0)	(190 ± 3.0)

*Number of days after 1st RTI analysis date.

**A different NBS standard was analyzed as internal quality control on each day of RTI analysis.

***A NBS primary standard was used for calibration for 7th RTI Analysis. Permeation tubes were used for calibration for all previous analyes.

****Seventh analysis was performed by automated cryogenic preconcentration with cryofocusing followed by GC/FID. Previous analysis were performed by direct injection.

STABILITY STUDY FOR GROUP I COMPOUNDS***
CYLINDER I-A1

ACTIVITY	COMPOUND				
	Carbon tetrachloride	Chloroform	Perchloroethylene	Benzene	Vinyl Chloride
MANUFACTURER ANALYSIS					
Theoretical PPB	(9.70)	(40.5)	(9.60)	(19.3)	(20.0)
1st Analysis Date	11/16/83	11/16/83	11/16/83	12/06/83	12/06/83
PPB	(8.30)	(42.9)	(10.2)	(16.0)	(18.8)
2nd Analysis Date	12/16/83	12/16/83	12/16/83	12/15/83	12/15/83
PPB	(7.30)	(41.6)	(7.3.0)	(16.8)	(19.2)
RTI ANALYSIS****					
1st RTI Analysis Date	1/06/84	1/06/84	1/06/84	1/23/84	1/23/84
PPB	(9.8 ± 0.3)	(40.4 ± 0.8)	(10.8 ± 0.3)	(19.6 ± 0.6)	(20.3 ± 0.6)
2nd RTI Analysis Day*	59	59	59	49	49
PPB	(9.9 ± 0.3)	(42.0 ± 0.9)	(9.6 ± 0.2)	(20.0 ± 0.6)	(19.8 ± 0.6)
3rd RTI Analysis Day*					
PPB	on audit	on audit	on audit	on audit	on audit
4th RTI Analysis Day*	404	404	404	375	375
PPB	(9.9 ± 0.3)	(37.6 ± 0.8)	(9.1 ± 0.2)	(19.4 ± 0.6)	(20.2 ± 0.6)
5th RTI Analysis Day*	497	497	497	508	508
PPB	(9.5 ± 0.3)	(37.3 ± 0.8)	(10.0 ± 0.2)	(19.7 ± 0.6)	(20.6 ± 0.7)
6th RTI Analysis Day*					
PPB	on audit	on audit	on audit	on audit	on audit
7th RTI Analysis Day*					
PPB	on audit	on audit	on audit	on audit	on audit
RTI QUALITY CONTROL**					
1st RTI Analysis Date	1/06/84	1/06/84	1/06/84	1/23/84	1/23/84
PPB	(20.6 ± 0.6)	(22.8 ± 0.5)	(31.7 ± 0.8)	(17.5 ± 0.6)	(14.3 ± 0.5)
NBS Concen. PPB	(21.0 ± 1.0)	(23.0 ± 1.0)	(29.0 ± 2.0)	(17.0 ± 1.0)	(15.0 ± 1.0)

(Continued)

STABILITY STUDY FOR GROUP I COMPOUNDS*** (Continued)
CYLINDER I-A1

ACTIVITY		COMPOUND				
		Carbon tetra-chloride	Chloroform	Perchloro-ethylene	Benzene	Vinyl Chloride
RTI QUALITY CONTROL**						
2nd RTI Analysis	Day	59	59	59	49	49
	PPB	(20.3 ± 0.6)	(8.90 ± 0.2)	(23.6 ± 0.6)	(18.6 ± 0.6)	(15.0 ± 0.5)
NBS Concen.**	PPB	(19.0 ± 1.0)**	(9.00 ± 1.0)**	(22.0 ± 1.0)**	(17.0 ± 1.0)	(15.0 ± 1.0)
3rd RTI Analysis	Day	238	238	238	226	226
	PPB	(21.1 ± 0.6)	(24.3 ± 0.5)	(29.5 ± 0.7)	(19.0 ± 0.6)	(15.3 ± 0.5)
NBS Concen.	PPB	(21.0 ± 1.0)	(23.0 ± 1).0)	(29.0 ± 2.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
4th RTI Analysis	Day	404	404	404	375	375
	PPB	(20.6 ± 0.6)	(23.2 ± 0.5)	(28.7 ± 0.7)	(18.1 ± 0.6)	(14.1 ± 0.5)
NBS Concen.	PPB	(21.0 ± 1.0)	(23.0 ± 1.0)	(29.0 ± 2.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
5th RTI Analysis	Day	497	497	497	508	508
	PPB	(19.9 ± 0.6)	(22.9 ± 0.5)	(28.8 ± 0.7)	(18.5 ± 0.6)	(15.2 ± 0.5)
NBS Concen.	PPB	(21.0 ± 1.0)	(23.0 ± 1.0)	(29.0 ± 2.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
6th RTI Analysis	Day	833	833	833	810	810
	PPB	(22.4 ± 0.7)	(25.5 ± 0.5)	(32.7 ± 0.8)	(16.9 ± 0.5)	(14.7 ± 0.5)
NBS Concen.	PPB	(21.0 ± 1.0)	(23.0 ± 1.0)	(29.0 ± 2.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
7th RTI Analysis	Day	1337	1337	1337	1337	1337
	PPB	(18.7 ± 0.9)	(9.80 ± 0.4)	(23.0 ± 0.6)	(17.3 ± 0.5)	(16.6 ± 0.6)
NBS Concentration	PPB	(19.3 ± 1.0)	(9.60 ± 0.2)	(22.8 ± 0.2)	(16.8 ± 0.5)	(16.1 ± 1.0)

*Number of days after 1st RTI analysis date.

**A different NBS standard was analyzed as internal quality control on each day of RTI analysis.

***A NBS primary standard was used for calibration for 7th RTI Analysis. Permeation tubes were used for calibration for all previous analyes.

****Seventh analysis was performed by automated cryogenic preconcentration with cryofocusing followed by GC/FID. Previous analysis were performed by direct injection.

STABILITY STUDY FOR GROUP I COMPOUNDS***
CYLINDER I-A2

ACTIVITY	COMPOUND				
	Carbon tetrachloride	Chloroform	Perchloroethylene	Benzene	Vinyl Chloride
MANUFACTURER ANALYSIS					
Theoretical PPB	(9.50)	(39.6)	(9.40)	(18.9)	(20.0)
1st Analysis Date	11/17/83	11/17/83	11/17/83	12/06/83	12/06/83
PPB	(7.70)	(42.1)	(9.20)	(15.8)	(18.3)
2nd Analysis Date	12/16/83	12/16/83	12/16/83	12/15/83	12/15/83
PPB	(7.10)	(41.2)	(7.70)	(19.6)	(19.2)
RTI ANALYSIS****					
1st RTI Analysis Date	1/06/84	1/06/84	1/06/84	1/23/84	1/23/84
PPB	(9.30 ± 0.3)	(40.0 ± 0.8)	(9.40 ± 0.2)	(19.6 ± 0.6)	(20.2 ± 0.6)
2nd RTI Analysis Day*	59	59	59	49	49
PPB	(9.30 ± 0.3)	(38.7 ± 0.8)	(10.3 ± 0.2)	(20.0 ± 0.6)	(19.0 ± 0.6)
3rd RTI Analysis Day*	238	238	238	226	226
PPB	(9.50 ± 0.3)	(40.6 ± 0.9)	(9.50 ± 0.2)	(19.4 ± 0.6)	(20.6 ± 0.7)
4th RTI Analysis Day*	404	404	404	375	375
PPB	(9.60 ± 0.3)	(37.1 ± 0.8)	(9.10 ± 0.2)	(19.4 ± 0.6)	(20.4 ± 0.7)
5th RTI Analysis Day*					
PPB	on audit	on audit	on audit	on audit	on audit
6th RTI Analysis Day*	833	833	833	810	810
PPB	(10.5 ± 0.3)	(40.5 ± 0.9)	(11.2 ± 0.3)	(19.7 ± 0.6)	(19.4 ± 0.6)
7th RTI Analysis Day*	1337	1337	1337	1337	1337
PPB	(9.45 ± 0.3)	(40.6 ± 0.9)	(10.1 ± 0.3)	(19.2 ± 0.6)	(20.1 ± 0.6)
RTI QUALITY CONTROL**					
1st RTI Analysis Date	1/06/84	1/06/84	1/06/84	1/23/84	1/23/84
PPB	(20.6 ± 0.6)	(22.8 ± 0.5)	(31.7 ± 0.8)	(17.5 ± 0.6)	(14.3 ± 0.5)
NBS Concen. PPB	(21.0 ± 1.0)	(23.0 ± 1.0)	(29.0 ± 2.0)	(17.0 ± 1.0)	(15.0 ± 1.0)

(Continued)

STABILITY STUDY FOR GROUP I COMPOUNDS*** (Continued)
CYLINDER I-A2

ACTIVITY		COMPOUND				
		Carbon tetra-chloride	Chloroform	Perchloro-ethylene	Benzene	Vinyl Chloride
RTI QUALITY CONTROL**						
2nd RTI Analysis	Day	59	59	59	49	49
	PPB	(20.3 ± 0.6)	(8.90 ± 0.2)	(23.6 ± 0.6)	(18.6 ± 0.6)	(15.0 ± 0.5)
NBS Concen.**	PPB	(19.0 ± 1.0)**	(9.00 ± 1.0)**	(22.0 ± 1.0)**	(17.0 ± 1.0)	(15.0 ± 1.0)
3rd RTI Analysis	Day	238	238	238	226	226
	PPB	(21.1 ± 0.6)	(24.3 ± 0.5)	(29.5 ± 0.7)	(19.0 ± 0.6)	(15.3 ± 0.5)
NBS Concen.	PPB	(21.0 ± 1.0)	(23.0 ± 1.0)	(29.0 ± 2.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
4th RTI Analysis	Day	404	404	404	375	375
	PPB	(20.6 ± 0.6)	(23.2 ± 0.5)	(28.7 ± 0.7)	(18.1 ± 0.6)	(14.1 ± 0.5)
NBS Concen.	PPB	(21.0 ± 1.0)	(23.0 ± 1.0)	(29.0 ± 2.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
5th RTI Analysis	Day	497	497	497	508	508
	PPB	(19.9 ± 0.6)	(22.9 ± 0.5)	(28.8 ± 0.7)	(18.5 ± 0.6)	(15.2 ± 0.5)
NBS Concen.	PPB	(21.0 ± 1.0)	(23.0 ± 1.0)	(29.0 ± 2.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
6th RTI Analysis	Day	833	833	833	810	810
	PPB	(22.4 ± 0.7)	(25.5 ± 0.5)	(32.7 ± 0.8)	(16.9 ± 0.5)	(14.7 ± 0.5)
NBS Concen.	PPB	(21.0 ± 1.0)	(23.0 ± 1.0)	(29.0 ± 2.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
7th RTI Analysis	Day	1337	1337	1337	1337	1337
	PPB	(18.7 ± 0.9)	(9.80 ± 0.4)	(23.0 ± 0.6)	(17.3 ± 0.5)	(16.6 ± 0.6)
NBS Concen.	PPB	(19.3 ± 1.0)	(9.60 ± 0.2)	(22.8 ± 0.2)	(16.8 ± 0.5)	(16.1 ± 1.0)

*Number of days after 1st RTI analysis date.

**A different NBS standard was analyzed as internal quality control on each day of RTI analysis.

***A NBS primary standard was used for calibration for 7th RTI Analysis. Permeation tubes were used for calibration for all previous analyes.

****Seventh analysis was performed by automated cryogenic preconcentration with cryofocusing followed by GC/FID. Previous analysis were performed by direct injection.

STABILITY STUDY FOR GROUP I COMPOUNDS***
CYLINDER I-A3

ACTIVITY	COMPOUND				
	Carbon tetrachloride	Chloroform	Perchloroethylene	Benzene	Vinyl Chloride
MANUFACTURER ANALYSIS					
Theoretical PPB	(11.4)	(47.3)	(11.2)	(22.5)	(20.0)
1st Analysis Date	12/09/83	12/09/83	12/09/83	12/07/83	12/07/83
PPB	(9.50)	(47.2)	(9.40)	(18.7)	(15.8)
2nd Analysis Date	12/16/83	12/16/83	12/16/83	12/15/83	12/15/83
PPB	(8.90)	(48.7)	(8.60)	(20.3)	(19.4)
RTI ANALYSIS****					
1st RTI Analysis Date	1/06/84	1/06/84	1/06/84	1/23/84	1/23/84
PPB	(11.5 ± 0.3)	(46.6 ± 1.0)	(12.0 ± 0.3)	(23.2 ± 0.7)	(20.3 ± 0.6)
2nd RTI Analysis Day*	59	59	59	49	49
PPB	(11.0 ± 0.3)	(47.4 ± 1.0)	(11.3 ± 0.3)	(25.2 ± 0.8)	(19.8 ± 0.6)
3rd RTI Analysis Day*					
PPB	on audit	on audit	on audit	on audit	on audit
4th RTI Analysis Day*	404	404	404	375	375
PPB	(11.4 ± 0.3)	(43.9 ± 0.9)	(10.3 ± 0.2)	(23.0 ± 0.7)	(20.5 ± 0.7)
5th RTI Analysis Day*	497	497	497		
PPB	(11.0 ± 0.3)	(43.6 ± 0.9)	(11.6 ± 0.3)	on audit	on audit
6th RTI Analysis Day*	833	833	833	810	810
PPB	(12.3 ± 0.4)	(48.3 ± 1.0)	(13.3 ± 0.3)	(24.6 ± 0.8)	(21.1 ± 0.7)
7th RTI Analysis Day*					
PPB	on audit	on audit	on audit	on audit	on audit
RTI QUALITY CONTROL**					
1st RTI Analysis Date	1/06/84	1/06/84	1/06/84	1/23/84	1/23/84
PPB	(20.6 ± 0.6)	(22.8 ± 0.5)	(31.7 ± 0.8)	(17.5 ± 0.6)	(14.3 ± 0.5)
NBS Concen. PPB	(21.0 ± 1.0)	(23.0 ± 1.0)	(29.0 ± 2.0)	(17.0 ± 1.0)	(15.0 ± 1.0)

(Continued)

STABILITY STUDY FOR GROUP I COMPOUNDS*** (Continued)
CYLINDER I-A3

ACTIVITY		COMPOUND				
		Carbon tetrachloride	Chloroform	Perchloroethylene	Benzene	Vinyl Chloride
RTI QUALITY CONTROL**						
2nd RTI Analysis	Day	59	59	59	49	49
	PPB	(20.3 ± 0.6)	(8.90 ± 0.2)	(23.6 ± 0.6)	(18.6 ± 0.6)	(15.0 ± 0.5)
NBS Concen.**	PPB	(19.0 ± 1.0)**	(9.00 ± 1.0)**	(22.0 ± 1.0)**	(17.0 ± 1.0)	(15.0 ± 1.0)
3rd RTI Analysis	Day	238	238	238	226	226
	PPB	(21.1 ± 0.6)	(24.3 ± 0.5)	(29.5 ± 0.7)	(19.0 ± 0.6)	(15.3 ± 0.5)
NBS Concen.	PPB	(21.0 ± 1.0)	(23.0 ± 1.0)	(29.0 ± 2.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
4th RTI Analysis	Day	404	404	404	375	375
	PPB	(20.6 ± 0.6)	(23.2 ± 0.5)	(28.7 ± 0.7)	(18.1 ± 0.6)	(14.1 ± 0.5)
NBS Concen.	PPB	(21.0 ± 1.0)	(23.0 ± 1.0)	(29.0 ± 2.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
5th RTI Analysis	Day	497	497	497	508	508
	PPB	(19.9 ± 0.6)	(22.9 ± 0.5)	(28.8 ± 0.7)	(18.5 ± 0.6)	(15.2 ± 0.5)
NBS Concen.	PPB	(21.0 ± 1.0)	(23.0 ± 1.0)	(29.0 ± 2.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
6th RTI Analysis	Day	833	833	833	810	810
	PPB	(22.4 ± 0.7)	(25.5 ± 0.5)	(32.7 ± 0.8)	(16.9 ± 0.5)	(14.7 ± 0.5)
NBS Concen.	PPB	(21.0 ± 1.0)	(23.0 ± 1.0)	(29.0 ± 2.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
7th RTI Analysis	Day	1337	1337	1337	1337	1337
	PPB	(18.7 ± 0.9)	(9.80 ± 0.4)	(23.0 ± 0.6)	(17.3 ± 0.5)	(16.6 ± 0.6)
NBS Concentration	PPB	(19.3 ± 1.0)	(9.60 ± 0.2)	(22.8 ± 0.2)	(16.8 ± 0.5)	(16.1 ± 1.0)

*Number of days after 1st RTI analysis date.

**A different NBS standard was analyzed as internal quality control on each day of RTI analysis.

***A NBS primary standard was used for calibration for 7th RTI Analysis. Permeation tubes were used for calibration for all previous analyes.

****Seventh analysis was performed by automated cryogenic preconcentration with cryofocusing followed by GC/FID. Previous analysis were performed by direct injection.

STABILITY STUDY FOR GROUP I COMPOUNDS***
CYLINDER I-A4

ACTIVITY	COMPOUND				
	Carbon tetrachloride	Chloroform	Perchloroethylene	Benzene	Vinyl Chloride
MANUFACTURER ANALYSIS					
Theoretical PPB	(10.9)	(45.3)	(10.8)	(21.5)	(20.0)
1st Analysis Date	12/09/83	12/09/83	12/09/83	12/07/83	12/07/83
PPB	(9.00)	(46.5)	(9.60)	(18.6)	(18.3)
2nd Analysis Date	12/16/83	12/16/83	12/16/83	12/15/83	12/15/83
PPB	(8.60)	(51.1)	(10.1)	(19.5)	(19.2)
RTI ANALYSIS****					
1st RTI Analysis Date	1/09/84	1/09/84	1/09/84	1/23/84	1/23/84
PPB	(11.0 ± 0.3)	(45.0 ± 0.9)	(12.0 ± 0.3)	(22.3 ± 0.7)	(20.5 ± 0.7)
2nd RTI Analysis Day*	59	59	59	59	59
PPB	on audit	on audit	on audit	on audit	on audit
3rd RTI Analysis Day*	238	238	238	226	226
PPB	(10.8 ± 0.3)	(47.1 ± 1.0)	(10.3 ± 0.2)	(23.2 ± 0.7)	(20.1 ± 0.6)
4th RTI Analysis Day*	404	404	404	375	375
PPB	(11.4 ± 0.3)	(43.9 ± 0.9)	(10.3 ± 0.2)	(19.9 ± 0.6)	(22.1 ± 0.7)
5th RTI Analysis Day*				508	508
PPB	on audit	on audit	on audit	(22.3 ± 0.7)	(19.8 ± 0.6)
6th RTI Analysis Day*					
PPB	on audit	on audit	on audit	on audit	on audit
7th RTI Analysis Day*	1337	1337	1337	1337	1337
PPB	(10.8 ± 0.3)	(43.3 ± 0.9)	(10.6 ± 0.2)	(21.8 ± 0.7)	(19.7 ± 0.6)
RTI QUALITY CONTROL**					
1st RTI Analysis Date	1/06/84	1/06/84	1/06/84	1/23/84	1/23/84
PPB	(20.6 ± 0.6)	(22.8 ± 0.5)	(31.7 ± 0.8)	(17.5 ± 0.6)	(14.3 ± 0.5)
NBS Concentration PPB	(21.0 ± 1.0)	(23.0 ± 1.0)	(29.0 ± 2.0)	(17.0 ± 1.0)	(15.0 ± 1.0)

(Continued)

STABILITY STUDY FOR GROUP I COMPOUNDS*** (Continued)
CYLINDER I-A4

ACTIVITY	COMPOUND				
	Carbon tetrachloride	Chloroform	Perchloroethylene	Benzene	Vinyl Chloride
RTI QUALITY CONTROL**					
2nd RTI Analysis Day*	59	59	59	49	49
PPB	(20.3 ± 0.6)	(8.90 ± 0.2)	(23.6 ± 0.6)	(18.6 ± 0.6)	(15.0 ± 0.5)
NBS Concentration** PPB	(19.0 ± 1.0)**	(9.00 ± 1.0)**	(22.0 ± 1.0)**	(17.0 ± 1.0)	(15.0 ± 1.0)
3rd RTI Analysis Day*	238	238	238	226	226
PPB	(21.1 ± 0.6)	(24.3 ± 0.5)	(29.5 ± 0.7)	(19.0 ± 0.6)	(15.3 ± 0.5)
NBS Concentration PPB	(21.0 ± 1.0)	(23.0 ± 1.0)	(29.0 ± 2.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
4th RTI Analysis Day*	404	404	404	375	375
PPB	(20.6 ± 0.6)	(23.2 ± 0.5)	(28.7 ± 0.7)	(18.1 ± 0.6)	(14.1 ± 0.5)
NBS Concentration PPB	(21.0 ± 1.0)	(23.0 ± 1.0)	(29.0 ± 2.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
5th RTI Analysis Day*	497	497	497	508	508
PPB	(19.9 ± 0.6)	(22.9 ± 0.5)	(28.8 ± 0.7)	(18.5 ± 0.6)	(15.2 ± 0.5)
NBS Concentration PPB	(21.0 ± 1.0)	(23.0 ± 1.0)	(29.0 ± 2.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
6th RTI Analysis Day*	833	833	833	810	810
PPB	(22.4 ± 0.7)	(25.5 ± 0.5)	(32.7 ± 0.8)	(16.9 ± 0.5)	(14.7 ± 0.5)
NBS Concentration PPB	(21.0 ± 1.0)	(23.0 ± 1.0)	(29.0 ± 2.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
7th RTI Analysis Day*	1337	1337	1337	1337	1337
PPB	(18.3 ± 0.9)	(9.54 ± 0.2)	(22.7 ± 0.6)	(16.6 ± 0.5)	(15.8 ± 0.5)
NBS Concentration PPB	(19.3 ± 1.0)	(9.60 ± 0.2)	(22.8 ± 0.2)	(16.8 ± 0.5)	(16.1 ± 1.0)

*Number of days after 1st RTI analysis date.
**A different NBS standard was analyzed as internal quality control on each day of RTI analysis.
***A NBS primary standard was used for calibration for 7th RTI Analysis. Permeation tubes were used for calibration for all previous analyes.
****Seventh analysis was performed by automated cryogenic preconcentration with cryofocusing followed by GC/FID. Previous analysis were performed by direct injection.

STABILITY STUDY FOR GROUP I COMPOUNDS***
CYLINDER I-A5

ACTIVITY	COMPOUND				
	Carbon tetrachloride	Chloroform	Perchloroethylene	Benzene	Vinyl Chloride
MANUFACTURER ANALYSIS					
Theoretical PPB	(48.4)	(10.6)	(10.6)	(48.4)	(50.0)
1st Analysis Date	12/09/83	12/09/83	12/09/83	12/07/83	12/07/83
PPB	(46.6)	(9.70)	(9.50)	(45.1)	(47.5)
2nd Analysis Date	12/20/83	12/20/83	12/20/83	12/15/83	12/15/83
PPB	(47.8)	(9.00)	(8.70)	(46.0)	(49.8)
RTI ANALYSIS****					
1st RTI Analysis Date	1/09/84	1/09/84	1/09/84	1/19/84	1/19/84
PPB	(47.7 ± 1.4)	(10.5 ± 0.2)	(11.2 ± 0.3)	(51.6 ± 1.7)	(53.0 ± 1.7)
2nd RTI Analysis Day*	57	57	57	53	53
PPB	(51.1 ± 1.5)	(9.3 ± 0.2)	(9.0 ± 0.2)	(52.0 ± 1.7)	(50.0 ± 1.6)
3rd RTI Analysis Day*	235	235	235	229	229
PPB	(50.9 ± 1.5)	(10.5 ± 0.2)	(10.5 ± 0.3)	(54.0 ± 1.7)	(52.8 ± 1.7)
4th RTI Analysis Day*	402	402	402	375	375
PPB	(47.2 ± 1.4)	(10.2 ± 0.2)	(10.4 ± 0.2)	(53.8 ± 1.7)	(50.8 ± 1.6)
5th RTI Analysis Day*	494	494	494	497	497
PPB	(46.0 ± 1.4)	(10.3 ± 0.2)	(10.7 ± 0.3)	(49.0 ± 1.6)	(50.1 ± 1.6)
6th RTI Analysis Day*	on audit	on audit	on audit	on audit	on audit
PPB					
7th RTI Analysis Day*	on audit	on audit	on audit	on audit	on audit
PPB					
RTI QUALITY CONTROL**					
1st RTI Analysis Date	1/09/84	1/09/84	1/09/84	1/19/84	1/19/84
PPB	(18.9 ± 0.6)	(9.40 ± 0.2)	(24.4 ± 0.6)	(20.2 ± 0.6)	(16.3 ± 0.5)
NBS Concentration PPB	(19.0 ± 1.0)	(9.00 ± 1.0)	(22.0 ± 1.0)	(17.0 ± 1.0)	(15.0 ± 1.0)

(Continued)

STABILITY STUDY FOR GROUP I COMPOUNDS*** (Continued)
CYLINDER I-A5

ACTIVITY	COMPOUND				
	Carbon tetrachloride	Chloroform	Perchloroethylene	Benzene	Vinyl Chloride
RTI QUALITY CONTROL**					
2nd RTI Analysis Day*	57	57	57	53	53
PPB	(21.5 ± 0.6)	(10.1 ± 0.2)	(26.1 ± 0.6)	(18.6 ± 0.6)	(15.0 ± 0.5)
NBS Concentration PPB	(19.0 ± 1.0)	(9.00 ± 1.0)	(22.0 ± 1.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
3rd RTI Analysis Day*	235	235	235	229	229
PPB	(21.1 ± 0.6)	(24.3 ± 0.5)	(29.5 ± 0.7)	(19.0 ± 0.6)	(15.3 ± 0.5)
NBS Concentration** PPB	(21.0 ± 1.0)**	(23.0 ± 1.0)**	(29.0 ± 2.0)**	(17.0 ± 1.0)	(15.0 ± 1.0)
4th RTI Analysis Day*	402	402	402	375	375
PPB	(18.9 ± 0.6)	(9.20 ± 0.2)	(21.9 ± 0.5)	(17.8 ± 0.6)	(14.8 ± 0.5)
NBS Concentration PPB	(19.0 ± 1.0)	(9.00 ± 1.0)	(22.0 ± 1.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
5th RTI Analysis Day*	494	494	494	497	497
PPB	(19.9 ± 0.6)	(22.9 ± 0.5)	(28.8 ± 0.7)	(18.5 ± 0.6)	(29.4 ± 0.9)
NBS Concentration** PPB	(21.0 ± 1.0)	(23.0 ± 1.0)	(29.0 ± 2.0)	(18.0 ± 1.0)	(31.0 ± 2.0)
6th RTI Analysis Day*	833	833	833	810	810
PPB	(22.4 ± 0.7)	(25.5 ± 0.5)	(32.7 ± 0.8)	(16.9 ± 0.5)	(14.7 ± 0.5)
NBS Concentration PPB	(21.0 ± 1.0)	(23.0 ± 1.0)	(29.0 ± 2.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
7th RTI Analysis Day*	1337	1337	1337	1337	1337
PPB	(18.7 ± 0.9)	(9.80 ± 0.4)	(23.0 ± 0.6)	(17.3 ± 0.5)	(16.6 ± 0.6)
NBS Concentration PPB	(19.3 ± 1.0)	(9.60 ± 0.2)	(22.8 ± 0.2)	(16.8 ± 0.5)	(16.1 ± 1.0)

*Number of days after 1st RTI analysis date.

**A different NBS standard was analyzed as internal quality control on each day of RTI analysis.

***A NBS primary standard was used for calibration for 7th RTI Analysis. Permeation tubes were used for calibration for all previous analyes.

****Seventh analysis was performed by automated cryogenic preconcentration with cryofocusing followed by GC/FID. Previous analysis were performed by direct injection.

STABILITY STUDY FOR GROUP I COMPOUNDS***
CYLINDER I-A6

ACTIVITY	COMPOUND				
	Carbon tetrachloride	Chloroform	Perchloroethylene	Benzene	Vinyl Chloride
MANUFACTURER ANALYSIS					
Theoretical PPB	(38.8)	(8.50)	(8.50)	(38.8)	(50.0)
1st Analysis Date	12/09/83	12/09/83	12/09/83	12/07/83	12/07/83
PPB	(38.0)	(6.90)	(8.80)	(35.0)	(47.1)
2nd Analysis Date	12/20/83	12/20/83	12/20/83	12/15/83	12/15/83
PPB	(37.5)	(6.70)	(8.10)	(34.5)	(49.3)
RTI ANALYSIS****					
1st RTI Analysis Date	1/09/84	1/09/84	1/09/84	1/19/84	1/19/84
PPB	(38.6 ± 1.2)	(8.20 ± 0.2)	(8.50 ± 0.2)	(41.9 ± 1.3)	(53.0 ± 1.7)
2nd RTI Analysis Day*	57	57	57	53	53
PPB	(41.0 ± 1.2)	(7.30 ± 0.2)	(7.90 ± 0.2)	(41.1 ± 1.3)	(49.8 ± 1.6)
3rd RTI Analysis Day*	235	235	235	229	229
PPB	(40.4 ± 1.2)	(8.20 ± 0.2)	(8.20 ± 0.2)	(43.1 ± 1.4)	(51.9 ± 1.7)
4th RTI Analysis Day*	402	402	402	375	375
PPB	(37.7 ± 1.1)	(8.30 ± 0.2)	(8.40 ± 0.2)	(40.7 ± 1.3)	(50.8 ± 1.6)
5th RTI Analysis Day*	494	494	494	497	497
PPB	(37.2 ± 1.1)	(8.10 ± 0.2)	(9.00 ± 0.2)	(39.1 ± 1.3)	(50.3 ± 1.6)
6th RTI Analysis Day* PPB	on audit	on audit	on audit	on audit	on audit
7th RTI Analysis Day*	on audit	on audit	on audit	on audit	on audit
RTI QUALITY CONTROL**					
1st RTI Analysis Date	1/09/84	1/09/84	1/09/84	1/19/84	1/19/84
PPB	(18.9 ± 0.6)	(9.40 ± 0.2)	(24.4 ± 0.6)	(20.2 ± 0.6)	(16.3 ± 0.5)
NBS Concentration PPB	(19.0 ± 1.0)	(9.00 ± 1.0)	(22.0 ± 1.0)	(17.0 ± 1.0)	(15.0 ± 1.0)

(Continued)

STABILITY STUDY FOR GROUP I COMPOUNDS*** (Continued)
CYLINDER I-A6

ACTIVITY	COMPOUND				
	Carbon tetra-chloride	Chloroform	Perchloro-ethylene	Benzene	Vinyl Chloride
RTI QUALITY CONTROL**					
2nd RTI Analysis Day	57	57	57	53	53
PPB	(21.5 ± 0.6)	(10.1 ± 0.2)	(26.1 ± 0.6)	(18.6 ± 0.6)	(15.0 ± 0.5)
NBS Concentration PPB	(19.0 ± 1.0)	(9.00 ± 1.0)	(22.0 ± 1.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
3rd RTI Analysis Day	235	235	235	229	229
PPB	(21.1 ± 0.6)	(24.3 ± 0.5)	(29.5 ± 0.7)	(19.0 ± 0.6)	(15.3 ± 0.5)
NBS Concentration** PPB	(21.0 ± 1.0)**	(23.0 ± 1.0)**	(29.0 ± 2.0)**	(17.0 ± 1.0)	(15.0 ± 1.0)
4th RTI Analysis Day	402	402	402	375	375
PPB	(18.9 ± 0.6)	(9.20 ± 0.2)	(21.9 ± 0.5)	(17.8 ± 0.6)	(14.8 ± 0.5)
NBS Concentration PPB	(19.0 ± 1.0)	(9.00 ± 1.0)	(22.0 ± 1.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
5th RTI Analysis Day	494	494	494	497	497
PPB	(19.9 ± 0.6)	(22.9 ± 0.5)	(28.8 ± 0.7)	(18.5 ± 0.6)	(29.4 ± 0.9)
NBS Concentration** PPB	(21.0 ± 1.0)	(23.0 ± 1.0)	(29.0 ± 2.0)	(18.0 ± 1.0)	(31.0 ± 2.0)
6th RTI Analysis Day	833	833	833	810	810
PPB	(22.4 ± 0.7)	(25.5 ± 0.5)	(32.7 ± 0.8)	(16.9 ± 0.5)	(14.7 ± 0.5)
NBS Concentration PPB	(21.0 ± 1.0)	(23.0 ± 1.0)	(29.0 ± 2.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
7th RTI Analysis Day	1337	1337	1337	1337	1337
PPB	(18.7 ± 0.9)	(9.80 ± 0.4)	(23.0 ± 0.6)	(17.3 ± 0.5)	(16.6 ± 0.6)
NBS Concentration PPB	(19.3 ± 1.0)	(9.60 ± 0.2)	(22.8 ± 0.2)	(16.8 ± 0.5)	(16.1 ± 1.0)

*Number of days after lst RTI analysis date.

**A different NBS standard was analyzed as internal quality control on each day of RTI analysis.

***A NBS primary standard was used for calibration for 7th RTI Analysis. Permeation tubes were used for calibration for all previous analyes.

****Seventh analysis was performed by automated cryogenic preconcentration with cryofocusing followed by GC/FID. Previous analysis were performed by direct injection.

STABILITY STUDY FOR GROUP I COMPOUNDS***
CYLINDER I-A7

ACTIVITY	COMPOUND				
	Carbon tetra-chloride	Chloroform	Perchloro-ethylene	Benzene	Vinyl Chloride
MANUFACTURER ANALYSIS					
Theoretical PPB	(51.1)	(11.2)	(11.2)	(51.1)	(50.0)
1st Analysis Date	12/09/83	12/09/83	12/09/83	12/07/83	12/07/83
PPB	(49.2)	(10.4)	(10.4)	(47.1)	(48.6)
2nd Analysis Date	12/20/83	12/20/83	12/20/83	12/15/83	12/15/83
PPB	(49.9)	(9.50)	(9.30)	(48.5)	(48.5)
RTI ANALYSIS****					
1st RTI Analysis Date	1/09/84	1/09/84	1/09/84	1/19/84	1/19/84
PPB	(49.2 ± 1.5)	(11.1 ± 0.2)	(11.8 ± 0.3)	(54.1 ± 1.7)	(53.4 ± 1.7)
2nd RTI Analysis Day*	57	57	57	53	53
PPB	(54.0 ± 1.6)	(9.7 ± 0.2)	(9.7 ± 0.2)	(54.8 ± 1.8)	(49.7 ± 1.6)
3rd RTI Analysis Day*	235	235	235	229	229
PPB	(53.3 ± 1.6)	(11.0 ± 0.2)	(11.2 ± 0.3)	(56.2 ± 1.8)	(51.9 ± 1.7)
4th RTI Analysis Day*	402	402	402	375	375
PPB	(49.6 ± 1.5)	(10.7 ± 0.2)	(11.1 ± 0.3)	(53.8 ± 1.7)	(50.8 ± 1.6)
5th RTI Analysis Day*	494	494	494	497	497
PPB	(47.8 ± 1.5)	(10.8 ± 0.2)	(11.7 ± 0.3)	(52.3 ± 1.7)	(50.4 ± 1.6)
6th RTI Analysis Day*	833	833	833	810	810
PPB	(54.5 ± 1.6)	(12.2 ± 0.3)	(13.6 ± 0.3)	(49.0 ± 1.6)	(45.8 ± 1.5)
7th RTI Analysis Day*	1337	1337	1337	1337	1337
PPB	(56.0 ± 1.6)	(11.0 ± 0.3)	(11.9 ± 0.3)	(51.3 ± 1.7)	(54.4 ± 1.8)
RTI QUALITY CONTROL**					
1st RTI Analysis Date	1/09/84	1/09/84	1/09/84	1/19/84	1/19/84
PPB	(18.9 ± 0.6)	(9.4 ± 0.2)	(24.4 ± 0.6)	(20.2 ± 0.6)	(16.3 ± 0.5)
NBS Concentration PPB	(19.0 ± 1.0)	(9.00 ± 1.0)	(22.0 ± 1.0)	(17.0 ± 1.0)	(15.0 ± 1.0)

(Continued)

STABILITY STUDY FOR GROUP I COMPOUNDS*** (Continued)
CYLINDER I-A7

ACTIVITY	COMPOUND				
	Carbon tetrachloride	Chloroform	Perchloroethylene	Benzene	Vinyl Chloride
RTI QUALITY CONTROL**					
2nd RTI Analysis Day	57	57	57	53	53
PPB	(21.5 ± 0.6)	(10.1 ± 0.2)	(26.1 ± 0.6)	(18.6 ± 0.6)	(15.0 ± 0.5)
NBS Concentration PPB	(19.0 ± 1.0)	(9.00 ± 1.0)	(22.0 ± 1.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
3rd RTI Analysis Day	235	235	235	229	229
PPB	(21.1 ± 0.6)	(24.3 ± 0.5)	(29.5 ± 0.7)	(19.0 ± 0.6)	(15.3 ± 0.5)
NBS Concentration** PPB	(21.0 ± 1.0)**	(23.0 ± 1.0)**	(29.0 ± 2.0)**	(17.0 ± 1.0)	(15.0 ± 1.0)
4th RTI Analysis Day	402	402	402	375	375
PPB	(18.9 ± 0.6)	(9.20 ± 0.2)	(21.9 ± 0.5)	(17.8 ± 0.6)	(14.8 ± 0.5)
NBS Concentration PPB	(19.0 ± 1.0)	(9.00 ± 1.0)	(22.0 ± 1.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
5th RTI Analysis Day	494	494	494	497	497
PPB	(19.9 ± 0.6)	(22.9 ± 0.5)	(28.8 ± 0.7)	(18.5 ± 0.6)	(29.4 ± 0.9)
NBS Concentration PPB	(21.0 ± 1.0)	(23.0 ± 1.0)	(29.0 ± 2.0)	(18.0 ± 1.0)	(31.0 ± 2.0)
6th RTI Analysis Day	833	833	833	810	810
PPB	(22.4 ± 0.7)	(25.5 ± 0.5)	(32.7 ± 0.8)	(16.9 ± 0.5)	(14.7 ± 0.5)
NBS Concentration PPB	(21.0 ± 1.0)	(23.0 ± 1.0)	(29.0 ± 2.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
7th RTI Analysis Day	1337	1337	1337	1337	1337
PPB	(18.3 ± 0.9)	(9.54 ± 0.2)	(22.7 ± 0.6)	(16.6 ± 0.5)	(15.8 ± 0.5)
NBS Concentration PPB	(19.3 ± 1.0)	(9.60 ± 0.2)	(22.8 ± 0.2)	(16.8 ± 0.5)	(16.1 ± 1.0)

*Number of days after 1st RTI analysis date.

**A different NBS standard was analyzed as internal quality control on each day of RTI analysis.

***A NBS primary standard was used for calibration for 7th RTI Analysis. Permeation tubes were used for calibration for all previous analyes.

****Seventh analysis was performed by automated cryogenic preconcentration with cryofocusing followed by GC/FID. Previous analysis were performed by direct injection.

STABILITY STUDY FOR GROUP I COMPOUNDS***
CYLINDER I-A8

ACTIVITY	COMPOUND				
	Carbon tetrachloride	Chloroform	Perchloroethylene	Benzene	Vinyl Chloride
MANUFACTURER ANALYSIS					
Theoretical PPB	(55.1)	(12.1)	(12.1)	(55.1)	---
1st Analysis Date	12/09/83	12/09/83	12/09/83	12/07/83	12/07/83
PPB	(52.6)	(7.90)	(10.5)	(42.7)	(48.4)
2nd Analysis Date	12/20/83	12/20/83	12/20/83	12/15/83	12/15/83
PPB	(53.2)	(6.30)	(9.50)	(43.9)	(48.3)
RTI ANALYSIS****					
1st RTI Analysis Date	1/09/84	1/09/84	1/09/84	1/19/84	1/19/84
PPB	(53.5 ± 2.7)	(7.40 ± 0.2)	(11.3 ± 0.3)	(48.3 ± 1.5)	(51.7 ± 1.7)
2nd RTI Analysis Day*	57	57	57	53	53
PPB	(59.0 ± 1.8)	(6.00 ± 0.1)	(10.5 ± 0.3)	(48.1 ± 1.5)	(49.2 ± 1.6)
3rd RTI Analysis Day*					
PPB	on audit	on audit	on audit	on audit	on audit
4th RTI Analysis Day*	402	402	402	375	375
PPB	(51.3 ± 1.5)	(4.30 ± 0.1)	(10.3 ± 0.2)	(46.3 ± 1.5)	(49.0 ± 1.6)
5th RTI Analysis Day*	494	494	494	497	497
PPB	(50.1 ± 1.5)	(4.10 ± 0.1)	(11.4 ± 0.3)	(44.2 ± 1.4)	(48.5 ± 1.6)
6th RTI Analysis Day*	833	833	833	810	810
PPB	(56.9 ± 1.7)	(3.90 ± 0.1)	(13.3 ± 0.3)	(43.4 ± 1.4)	(45.8 ± 1.5)
7th RTI Analysis Day*					
PPB	on audit	on audit	on audit	on audit	on audit
RTI QUALITY CONTROL**					
1st RTI Analysis Date	1/09/84	1/09/84	1/09/84	1/19/84	1/19/84
PPB	(18.9 ± 0.6)	(9.40 ± 0.2)	(24.4 ± 0.6)	(20.2 ± 0.6)	(16.3 ± 0.5)
NBS Concentration					
PPB	(190 ± 1.0)	(9.00 ± 1.0)	(22.0 ± 1.0)	(17.0 ± 1.0)	(15.0 ± 1.0)

(Continued)

STABILITY STUDY FOR GROUP I COMPOUNDS*** (Continued)
CYLINDER I-A8

ACTIVITY	COMPOUND				
	Carbon tetrachloride	Chloroform	Perchloroethylene	Benzene	Vinyl Chloride
RTI QUALITY CONTROL**					
2nd RTI Analysis Day	57	57	57	53	53
PPB	(21.5 ± 0.6)	(10.1 ± 0.2)	(26.1 ± 0.6)	(18.6 ± 0.6)	(15.0 ± 0.5)
NBS Concentration PPB	(19.0 ± 1.0)	(9.00 ± 1.0)	(22.0 ± 1.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
3rd RTI Analysis Day	235	235	235	229	229
PPB	(21.1 ± 0.6)	(24.3 ± 0.5)	(29.5 ± 0.7)	(19.0 ± 0.6)	(15.3 ± 0.5)
NBS Concentration** PPB	(21.0 ± 1.0)**	(23.0 ± 1.0)**	(29.0 ± 2.0)**	(17.0 ± 1.0)	(15.0 ± 1.0)
4th RTI Analysis Day	402	402	402	375	375
PPB	(18.9 ± 0.6)	(9.20 ± 0.2)	(21.9 ± 0.5)	(17.8 ± 0.6)	(14.8 ± 0.5)
NBS Concentration PPB	(19.0 ± 1.0)	(9.00 ± 1.0)	(22.0 ± 1.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
5th RTI Analysis Day	494	494	494	497	497
PPB	(19.9 ± 0.6)	(22.9 ± 0.5)	(28.8 ± 0.7)	(18.5 ± 0.6)	(29.4 ± 0.9)
NBS Concentration** PPB	(21.0 ± 1.0)	(23.0 ± 1.0)	(29.0 ± 2.0)	(18.0 ± 1.0)	(31.0 ± 2.0)
6th RTI Analysis Day	833	833	833	810	810
PPB	(22.4 ± 0.7)	(25.5 ± 0.5)	(32.7 ± 0.8)	(16.9 ± 0.5)	(14.7 ± 0.5)
NBS Concentration PPB	(21.0 ± 1.0)	(23.0 ± 1.0)	(29.0 ± 2.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
7th RTI Analysis Day	1337	1337	1337	1337	1337
PPB	(18.7 ± 0.9)	(9.80 ± 0.4)	(23.0 ± 0.6)	(17.3 ± 0.5)	(16.6 ± 0.6)
NBS Concentration PPB	(19.3 ± 1.0)	(9.60 ± 0.2)	(22.8 ± 0.2)	(16.8 ± 0.5)	(16.1 ± 1.0)

*Number of days after 1st RTI analysis date.

**A different NBS standard was analyzed as internal quality control on each day of RTI analysis.

***A NBS primary standard was used for calibration for 7th RTI Analysis. Permeation tubes were used for calibration for all previous analyes.

****Seventh analysis was performed by automated cryogenic preconcentration with cryofocusing followed by GC/FID. Previous analysis were performed by direct injection.

STABILITY STUDY FOR GROUP I COMPOUNDS***
CYLINDER I-A9

ACTIVITY	COMPOUND				
	Carbon tetrachloride	Chloroform	Perchloroethylene	Benzene	Vinyl Chloride
MANUFACTURER ANALYSIS					
Theoretical PPB	(13.6)	(13.4)	(68.4)	(48.3)	(30.0)
1st Analysis Date	12/08/83	12/08/83	12/08/83	12/09/83	12/09/83
PPB	(11.1)	(11.3)	(63.5)	(41.8)	(29.0)
2nd Analysis Date	12/19/83	12/19/83	12/19/83	12/16/83	12/16/83
PPB	(11.8)	(11.4)	(63.8)	(43.9)	(28.5)
RTI ANALYSIS****					
1st RTI Analysis Date	1/05/84	1/05/84	1/05/84	1/20/84	1/20/84
PPB	(13.0 ± 2.7)	(11.9 ± 0.2)	(69.6 ± 1.7)	(46.8 ± 1.5)	(31.1 ± 1.0)
2nd RTI Analysis Day*	60	60	60	52	52
PPB	(11.8 ± 0.4)	(10.5 ± 0.2)	(67.6 ± 1.6)	(46.4 ± 1.5)	(29.3 ± 0.9)
3rd RTI Analysis Day*	238	238	238	228	228
PPB	(12.7 ± 0.4)	(12.3 ± 0.3)	(62.2 ± 1.5)	(48.0 ± 1.5)	(31.3 ± 1.0)
4th RTI Analysis Day*	407	407	407	374	374
PPB	(12.5 ± 0.4)	(11.8 ± 0.2)	(63.7 ± 1.5)	(45.8 ± 1.5)	(29.9 ± 1.0)
5th RTI Analysis Day*	496	496	496	496	496
PPB	(12.0 ± 0.4)	(12.0 ± 0.3)	(64.3 ± 1.5)	(44.7 ± 1.4)	(29.0 ± 0.9)
6th RTI Analysis Day*	833	833	833	810	810
PPB	(13.7 ± 0.4)	(13.3 ± 0.3)	(69.9 ± 1.7)	(46.6 ± 1.5)	(31.3 ± 1.0)
7th RTI Analysis Day*	on audit	on audit	on audit	on audit	on audit
PPB					
RTI QUALITY CONTROL**					
1st RTI Analysis Date	1/05/84	1/05/84	1/05/84	1/20/84	1/20/84
PPB	(20.4 ± 0.6)	(22.8 ± 0.5)	(30.7 ± 0.7)	(18.4 ± 0.6)	(14.8 ± 0.5)
NBS Concentration PPB	(21.0 ± 1.0)	(23.0 ± 1.0)	(29.0 ± 2.0)	(17.0 ± 1.0)	(15.0 ± 1.0)

(Continued)

STABILITY STUDY FOR GROUP I COMPOUNDS*** (Continued)
CYLINDER I-A9

ACTIVITY	COMPOUND				
	Carbon tetrachloride	Chloroform	Perchloroethylene	Benzene	Vinyl Chloride
RTI QUALITY CONTROL**					
2nd RTI Analysis Day	60	60	60	52	52
PPB	(20.3 ± 0.6)	(8.90 ± 0.2)	(23.6 ± 0.6)	(18.6 ± 0.6)	(15.0 ± 0.5)
NBS Concentration** PPB	(19.0 ± 1.0)**	(9.00 ± 1.0)**	(22.0 ± 1.0)**	(17.0 ± 1.0)	(15.0 ± 1.0)
3rd RTI Analysis Day	238	238	238	228	228
PPB	(20.3 ± 0.6)	(23.6 ± 0.5)	(28.3 ± 0.7)	(19.0 ± 0.6)	(14.8 ± 0.5)
NBS Concentration PPB	(21.0 ± 1.0)	(23.0 ± 1.0)	(29.0 ± 2.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
4th RTI Analysis Day	407	407	407	374	374
PPB	(20.7 ± 0.6)	(23.3 ± 0.5)	(29.0 ± 0.7)	(17.8 ± 0.6)	(14.8 ± 0.5)
NBS Concentration PPB	(19.0 ± 1.0)	(9.00 ± 1.0)	(22.0 ± 1.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
5th RTI Analysis Day	496	496	496	504	504
PPB	(20.3 ± 0.6)	(23.4 ± 0.5)	(30.6 ± 0.7)	(18.6 ± 0.6)	(14.7 ± 0.5)
NBS Concentration PPB	(21.0 ± 1.0)	(23.0 ± 1.0)	(29.0 ± 2.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
6th RTI Analysis Day	833	833	833	810	810
PPB	(22.4 ± 0.7)	(25.5 ± 0.5)	(32.7 ± 0.8)	(18.9 ± 0.6)	(15.2 ± 0.5)
NBS Concentration PPB	(21.0 ± 1.0)	(23.0 ± 1.0)	(29.0 ± 2.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
7th RTI Analysis Day	1337	1337	1337	1337	1337
PPB	(18.7 ± 0.9)	(9.80 ± 0.4)	(23.0 ± 0.6)	(17.3 ± 0.5)	(16.6 ± 0.6)
NBS Concentration PPB	(19.3 ± 1.0)	(9.60 ± 0.2)	(22.8 ± 0.2)	(16.8 ± 0.5)	(16.1 ± 1.0)

*Number of days after lst RTI analysis date.

**A different NBS standard was analyzed as internal quality control on each day of RTI analysis.

***A NBS primary standard was used for calibration for 7th RTI Analysis. Permeation tubes were used for calibration for all previous analyes.

****Seventh analysis was performed by automated cryogenic preconcentration with cryofocusing followed by GC/FID. Previous analysis were performed by direct injection.

STABILITY STUDY FOR GROUP I COMPOUNDS***
CYLINDER I-A10

ACTIVITY	COMPOUND				
	Carbon tetra-chloride	Chloroform	Perchloro-ethylene	Benzene	Vinyl Chloride
MANUFACTURER ANALYSIS					
Theoretical PPB	(13.3)	(13.1)	(67.0)	(47.3)	(30.0)
1st Analysis Date	12/08/83	12/08/83	12/08/83	12/09/83	12/09/83
PPB	(11.1)	(11.8)	(75.1)	(41.0)	(28.9)
2nd Analysis Date	12/19/83	12/19/83	12/19/83	12/16/83	12/16/83
PPB	(11.8)	(11.1)	(64.1)	(43.3)	(28.3)
RTI ANALYSIS****					
1st RTI Analysis Date	1/05/84	1/05/84	1/05/84	1/20/84	1/20/84
PPB	(12.6 ± 2.7)	(11.6 ± 0.2)	(68.6 ± 1.6)	(46.1 ± 1.5)	(31.6 ± 1.0)
2nd RTI Analysis Day*	60	60	60	52	52
PPB	(11.6 ± 0.3)	(10.2 ± 0.2)	(67.7 ± 1.6)	(45.2 ± 1.4)	(29.8 ± 1.0)
3rd RTI Analysis Day*	238	238	238	228	228
PPB	(12.5 ± 0.4)	(12.2 ± 0.3)	(62.2 ± 1.5)	(47.3 ± 1.5)	(32.0 ± 1.0)
4th RTI Analysis Day*	407	407	407	374	374
PPB	(12.5 ± 0.4)	(11.7 ± 0.2)	(62.1 ± 1.5)	(45.4 ± 1.5)	(30.4 ± 1.0)
5th RTI Analysis Day*	496	496	496	504	504
PPB	(12.3 ± 0.4)	(12.2 ± 0.3)	(65.1 ± 1.6)	(43.9 ± 1.4)	(29.9 ± 1.0)
6th RTI Analysis Day*	833	833	833	810	810
PPB	(14.4 ± 0.4)	(14.4 ± 0.3)	(70.1 ± 1.7)	(45.7 ± 1.5)	(31.3 ± 1.0)
7th RTI Analysis Day*	on audit	on audit	on audit	on audit	on audit
PPB					
RTI QUALITY CONTROL**					
1st RTI Analysis Date	1/05/84	1/05/84	1/05/84	1/20/84	1/20/84
PPB	(20.4 ± 0.6)	(22.8 ± 0.5)	(30.7 ± 0.7)	(18.4 ± 0.6)	(14.8 ± 0.5)
NBS Concentration PPB	(21.0 ± 1.0)	(23.0 ± 1.0)	(29.0 ± 2.00	(17.0 ± 1.0)	(15.0 ± 1.0)

(Continued)

STABILITY STUDY FOR GROUP I COMPOUNDS*** (Continued)
CYLINDER I-A10

ACTIVITY	COMPOUND				
	Carbon tetra-chloride	Chloroform	Perchloro-ethylene	Benzene	Vinyl Chloride
RTI QUALITY CONTROL**					
2nd RTI Analysis Day	60	60	60	52	52
PPB	(20.3 ± 0.6)	(8.90 ± 0.2)	(23.6 ± 0.6)	(18.6 ± 0.6)	(15.0 ± 0.5)
NBS Concentration PPB	(19.0 ± 1.0)	(9.00 ± 1.0)	(22.0 ± 1.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
3rd RTI Analysis Day	238	238	238	228	228
PPB	(20.3 ± 0.6)	(23.6 ± 0.5)	(28.3 ± 0.7)	(19.0 ± 0.6)	(14.8 ± 0.5)
NBS Concentration PPB	(21.0 ± 1.0)	(23.0 ± 1.0)	(29.0 ± 2.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
4th RTI Analysis Day	407	407	407	374	374
PPB	(20.7 ± 0.6)	(23.6 ± 0.5)	(28.3 ± 0.7)	(19.0 ± 0.6)	(14.8 ± 0.5)
NBS Concentration** PPB	(19.0 ± 1.0)**	(9.00 ± 1.0)	(22.0 ± 1.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
5th RTI Analysis Day	496	496	496	504	504
PPB	(20.3 ± 0.6)	(23.4 ± 0.5)	(30.6 ± 0.7)	(18.6 ± 0.6)	(14.7 ± 0.5)
NBS Concentration PPB	(21.0 ± 1.0)	(23.0 ± 1.0)	(29.0 ± 2.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
6th RTI Analysis Day	833	833	833	810	810
PPB	(22.4 ± 0.7)	(25.5 ± 0.5)	(32.7 ± 0.8)	(18.9 ± 0.6)	(15.2 ± 0.5)
NBS Concentration PPB	(21.0 ± 1.0)	(23.0 ± 1.0)	(29.0 ± 2.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
7th RTI Analysis Day	1337	1337	1337	1337	1337
PPB	(18.7 ± 0.9)	(9.80 ± 0.4)	(23.0 ± 0.6)	(17.3 ± 0.5)	(16.6 ± 0.6)
NBS Concentration PPB	(19.3 ± 1.0)	(9.60 ± 0.2)	(22.8 ± 0.2)	(16.8 ± 0.5)	(16.1 ± 1.0)

*Number of days after 1st RTI analysis date.

**A different NBS standard was analyzed as internal quality control on each day of RTI analysis.

***A NBS primary standard was used for calibration for 7th RTI Analysis. Permeation tubes were used for calibration for all previous analyes.

****Seventh analysis was performed by automated cryogenic preconcentration with cryofocusing followed by GC/FID. Previous analysis were performed by direct injection.

STABILITY STUDY FOR GROUP I COMPOUNDS***
CYLINDER I-A11

ACTIVITY	COMPOUND				
	Carbon tetrachloride	Chloroform	Perchloroethylene	Benzene	Vinyl Chloride
MANUFACTURER ANALYSIS					
Theoretical PPB	(11.7)	(11.5)	(59.0)	(41.6)	(30.0)
1st Analysis Date	12/08/83	12/08/83	12/08/83	12/09/83	12/09/83
PPB	(5.70)	(7.30)	(25.9)	(22.1)	(28.5)
2nd Analysis Date	12/19/83	12/19/83	12/19/83	12/16/83	12/16/83
PPB	(6.70)	(6.20)	(20.6)	(23.2)	(28.6)
RTI ANALYSIS****					
1st RTI Analysis Date	1/05/84	1/05/84	1/05/84	1/20/84	1/20/84
PPB	(7.80 ± 2.7)	(7.80 ± 0.2)	(22.8 ± 0.5)	(26.2 ± 0.8)	(31.4 ± 1.0)
2nd RTI Analysis Day*	60	60	60	52	52
PPB	(6.60 ± 0.2)	(7.40 ± 0.2)	(21.9 ± 0.5)	(26.0 ± 0.8)	(29.6 ± 0.9)
3rd RTI Analysis Day*	238	238	238	228	228
PPB	(7.10 ± 0.2)	(8.10 ± 0.2)	(21.1 ± 0.5)	(29.9 ± 1.0)	(32.0 ± 1.0)
4th RTI Analysis Day*	407	407	407	374	374
PPB	(7.00 ± 0.2)	(7.80 ± 0.2)	(21.5 ± 0.5)	(29.8 ± 1.0)	(32.0 ± 1.0)
5th RTI Analysis Day*	496	496	496	504	504
PPB	(6.40 ± 0.2)	(7.90 ± 0.2)	(21.1 ± 0.5)	(25.9 ± 0.8)	(30.1 ± 1.0)
6th RTI Analysis Day*	833	833	833	810	810
PPB	(8.00 ± 0.2)	(9.40 ± 0.2)	(24.4 ± 0.6)	(26.5 ± 0.7)	(32.1 ± 1.0)
7th RTI Analysis Day*	on audit	on audit	on audit	on audit	on audit
PPB					
RTI QUALITY CONTROL**					
1st RTI Analysis Date	1/05/84	1/05/84	1/05/84	1/20/84	1/20/84
PPB	(20.4 ± 0.6)	(22.8 ± 0.5)	(30.7 ± 0.7)	(18.4 ± 0.6)	(14.8 ± 0.5)
NBS Concentration PPB	(21.0 ± 1.0)	(23.0 ± 1.0)	(29.0 ± 2.0)	(17.0 ± 1.0)	(15.0 ± 1.0)

(Continued)

STABILITY STUDY FOR GROUP I COMPOUNDS*** (Continued)
CYLINDER I-A11

ACTIVITY	COMPOUND				
	Carbon tetra-chloride	Chloroform	Perchloro-ethylene	Benzene	Vinyl Chloride
RTI QUALITY CONTROL**					
2nd RTI Analysis Day*	60	60	60	52	52
PPB	(20.3 ± 0.6)	(8.90 ± 0.2)	(23.6 ± 0.6)	(18.6 ± 0.6)	(15.0 ± 0.5)
NBS Concentration PPB	(19.0 ± 1.0)	(9.00 ± 1.0)	(22.0 ± 1.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
3th RTI Analysis Day*	238	238	238	238	238
PPB	(20.3 ± 0.6)	(23.6 ± 0.5)	(28.3 ± 0.7)	(19.0 ± 0.6)	(14.8 ± 0.5)
NBS Concentration PPB	(21.0 ± 1.0)	(23.0 ± 1.0)	(29.0 ± 2.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
4th RTI Analysis Day*	407	407	407	374	374
PPB	(20.7 ± 0.6)	(23.3 ± 0.5)	(29.0 ± 0.7)	(17.8 ± 0.6)	(14.8 ± 0.5)
NBS Concentration PPB	(19.0 ± 1.0)	(9.00 ± 1.0)	(22.0 ± 1.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
5th RTI Analysis Day*	496	496	496	504	504
PPB	(20.0 ± 0.6)	(22.8 ± 0.5)	(28.1 ± 0.7)	(18.6 ± 0.6)	(14.7 ± 0.5)
NBS Concentration PPB	(21.0 ± 1.0)	(23.0 ± 1.0)	(29.0 ± 2.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
6th RTI Analysis Day*	833	833	833	810	810
PPB	(22.4 ± 0.7)	(25.5 ± 0.5)	(32.7 ± 0.8)	(18.9 ± 0.6)	(15.2 ± 0.5)
NBS Concentration PPB	(21.0 ± 1.0)	(23.0 ± 1.0)	(29.0 ± 2.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
7th RTI Analysis Day*	1337	1337	1337	1337	1337
PPB	(18.7 ± 0.9)	(9.80 ± 0.4)	(23.0 ± 0.6)	(17.3 ± 0.5)	(16.6 ± 0.6)
NBS Concentration PPB	(19.3 ± 1.0)	(9.60 ± 0.2)	(22.8 ± 0.2)	(16.8 ± 0.5)	(16.1 ± 1.0)

*Number of days after lst RTI analysis date.

**A different NBS standard was analyzed as internal quality control on each day of RTI analysis.

***A NBS primary standard was used for calibration for 7th RTI Analysis. Permeation tubes were used for calibration for all previous analyes.

****Seventh analysis was performed by automated cryogenic preconcentration with cryofocusing followed by GC/FID. Previous analysis were performed by direct injection.

STABILITY STUDY FOR GROUP I COMPOUNDS***
CYLINDER I-A12

ACTIVITY	COMPOUND				
	Carbon tetra-chloride	Chloroform	Perchloro-ethylene	Benzene	Vinyl Chloride
MANUFACTURER ANALYSIS					
Theoretical PPB	(14.3)	(14.0)	(71.8)	(50.7)	(30.0)
1st Analysis Date	12/08/83	12/08/83	12/08/83	12/09/83	12/09/83
PPB	(12.7)	(13.2)	(70.9)	(46.5)	(28.1)
2nd Analysis Date	12/19/83	12/19/83	12/19/83	12/16/83	12/16/83
PPB	(12.6)	(12.9)	(68.3)	(48.9)	(28.5)
RTI ANALYSIS****					
1st RTI Analysis Date	1/05/84	1/05/84	1/05/84	1/20/84	1/20/84
PPB	(14.2 ± 2.7)	(13.0 ± 0.3)	(74.3 ± 1.8)	(51.9 ± 1.7)	(31.1 ± 1.0)
2nd RTI Analysis Day*	60	60	60	52	52
PPB	(13.4 ± 0.4)	(12.4 ± 0.3)	(75.6 ± 1.8)	(51.2 ± 1.6)	(29.6 ± 0.9)
3rd RTI Analysis Day*	on audit	on audit	on audit	on audit	on audit
PPB					
4th RTI Analysis Day*	on audit	on audit	on audit	on audit	on audit
PPB					
5th RTI Analysis Day*	on audit	on audit	on audit	on audit	on audit
PPB					
6th RTI Analysis Day*	833	833	833	810	810
PPB	(16.9 ± 0.5)	(15.3 ± 0.4)	(78.0 ± 1.9)	(52.6 ± 1.7)	(31.8 ± 1.0)
7th RTI Analysis Day*	on audit	on audit	on audit	on audit	on audit
PPB					
RTI QUALITY CONTROL**					
1st RTI Analysis Date	1/05/84	1/05/84	1/05/84	1/20/84	1/20/84
PPB	(20.4 ± 0.6)	(22.8 ± 0.5)	(30.7 ± 0.7)	(18.4 ± 0.6)	(14.8 ± 0.5)
NBS Concentration PPB	(21.0 ± 1.0)	(23.0 ± 1.0)	(29.0 ± 2.0)	(17.0 ± 1.0)	(15.0 ± 1.0)

(Continued)

STABILITY STUDY FOR GROUP I COMPOUNDS*** (Continued)
CYLINDER I-A12

ACTIVITY	COMPOUND				
	Carbon tetra-chloride	Chloroform	Perchloro-ethylene	Benzene	Vinyl Chloride
RTI QUALITY CONTROL**					
2nd RTI Analysis Day	60	60	60	52	52
PPB	(20.3 ± 0.6)	(8.90 ± 0.2)	(23.6 ± 0.6)	(18.6 ± 0.6)	(15.0 ± 0.5)
NBS Concentration**					
PPB	(19.0 ± 1.0)	(9.00 ± 1.0)	(22.0 ± 1.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
3rd RTI Analysis Day	238	238	238	228	228
PPB	(20.3 ± 0.6)	(23.6 ± 0.5)	(28.3 ± 0.7)	(19.0 ± 0.6)	(14.8 ± 0.5)
NBS Concentration					
PPB	(21.0 ± 1.0)	(23.0 ± 1.0)	(29.0 ± 2.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
4th RTI Analysis Day	407	407	407	374	374
PPB	(20.7 ± 0.6)	(23.3 ± 0.5)	(29.0 ± 0.7)	(17.8 ± 0.6)	(14.8 ± 0.5)
NBS Concentration					
PPB	(19.0 ± 1.0)	(9.00 ± 1.0)	(22.0 ± 1.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
5th RTI Analysis Day	496	496	496	504	504
PPB	(20.0 ± 0.6)	(22.8 ± 0.5)	(28.1 ± 0.7)	(18.6 ± 0.6)	(14.7 ± 0.5)
NBS Concentration					
PPB	(21.0 ± 1.0)	(23.0 ± 1.0)	(29.0 ± 2.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
6th RTI Analysis Day	833	833	833	810	810
PPB	(144 ± 4.3)	(119 ± 2.5)	(135 ± 3.3)	(18.9 ± 0.6)	(15.2 ± 0.5)
NBS Concentration					
PPB	(141 ± 3.0)	(120 ± 3.0)	(126 ± 3.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
7th RTI Analysis Day	1337	1337	1337	1337	1337
PPB	(18.7 ± 0.9)	(9.80 ± 0.4)	(23.0 ± 0.6)	(17.3 ± 0.5)	(16.6 ± 0.6)
NBS Concentration					
PPB	(19.3 ± 1.0)	(9.60 ± 0.2)	(22.8 ± 0.2)	(16.8 ± 0.5)	(16.1 ± 1.0)

*Number of days after 1st RTI analysis date.

**A different NBS standard was analyzed as internal quality control on each day of RTI analysis.

***A NBS primary standard was used for calibration for 7th RTI Analysis. Permeation tubes were used for calibration for all previous analyes.

****Seventh analysis was performed by automated cryogenic preconcentration with cryofocusing followed by GC/FID. Previous analysis were performed by direct injection.

STABILITY STUDY FOR GROUP I COMPOUNDS
CYLINDER I-A13

ACTIVITY	COMPOUND				
	Carbon tetra-chloride	Chloroform	Perchloro-ethylene	Benzene	Vinyl Chloride
MANUFACTURER ANALYSIS					
Theoretical PPB	(89.0)	(353)	(313)	(134)	(150)
1st Analysis Date	12/07/83	12/07/83	12/07/83	12/08/83	12/08/83
PPB	(83.3)	(369)	(297)	(133)	(136)
2nd Analysis Date	12/15/83	12/15/83	12/15/83	12/19/83	12/19/83
PPB	(81.0)	(371)	(315)	(139)	(145)
RTI ANALYSIS					
1st RTI Analysis Date	1/09/84	1/09/84	1/09/84	1/20/84	1/20/84
PPB	(91.6 ± 2.7)	(351 ± 7.4)	(332 ± 8.0)	(140 ± 4.5)	(156 ± 5.0)
2nd RTI Analysis Day*	57	57	57	54	54
PPB	(97.0 ± 2.9)	(354 ± 7.4)	(359 ± 8.6)	(139 ± 4.4)	(152 ± 4.9)
3rd RTI Analysis Day*	231	231	231	225	225
PPB	(94.7 ± 2.8)	(334 ± 7.0)	(323 ± 7.8)	(145 ± 4.6)	(153 ± 4.9)
4th RTI Analysis Day*	395	395	395	370	370
PPB	(86.7 ± 2.6)	(325 ± 6.8)	(322 ± 7.7)	(138 ± 4.4)	(153 ± 4.9)
5th RTI Analysis Day*	491	491	491	497	497
PPB	(86.2 ± 2.6)	(331 ± 7.0)	(313 ± 7.5)	(138 ± 4.4)	(146 ± 4.7)
6th RTI Analysis Day*	empty	empty	empty	empty	empty
PPB					
RTI QUALITY CONTROL**					
1st RTI Analysis Date	1/09/84	1/09/84	1/09/84	1/20/84	1/20/84
PPB	(18.9 ± 0.6)	(9.40 ± 0.2)	(24.4 ± 0.6)	(18.4 ± 0.6)	(14.8 ± 0.5)
NBS Concentration PPB	(19.0 ± 1.0)	(9.00 ± 1.0)	(22.0 ± 1.0)	(17.0 ± 1.0)	(15.0 ± 1.0)

(Continued)

STABILITY STUDY FOR GROUP I COMPOUNDS (Continued)
CYLINDER I-A13

ACTIVITY	COMPOUND				
	Carbon tetra-chloride	Chloroform	Perchloro-ethylene	Benzene	Vinyl Chloride
RTI QUALITY CONTROL**					
2nd RTI Analysis Day*	57	57	57	54	54
PPB	(21.5 ± 0.6)	(10.1 ± 0.2)	(26.1 ± 0.6)	(192 ± 6.1)	(192 ± 6.1)
NBS Concentration** PPB	(19.0 ± 1.0)	(9.00 ± 1.0)	(22.0 ± 1.0)	(192 ± 4.0)**	(192 ± 4.0)**
3rd RTI Analysis Day	231	231	231	225	225
PPB	(155 ± 4.7)	(132 ± 2.8)	(147 ± 3.5)	(191 ± 6.1)	(191 ± 6.1)
NBS Concentration PPB	(155 ± 3.0)	(134 ± 3.0)	(146 ± 3.0)	(192 ± 4.0)	(192 ± 4.0)
4th RTI Analysis Day	395	395	395	370	370
PPB	(154 ± 4.6)	(135 ± 2.8)	(145 ± 3.5)	(200 ± 6.4)	(195 ± 6.2)
NBS Concentration PPB	(155 ± 3.0)	(134 ± 3.0)	(146 ± 3.0)	(192 ± 4.0)	(192 ± 4.0)
5th RTI Analysis Day	491	491	491	497	497
PPB	(142 ± 4.3)	(115 ± 2.4)	(126 ± 3.0)	(139 ± 4.4)	(149 ± 4.8)
NBS Concentration PPB	(141 ± 3.0)	(120 ± 3.0)	(126 ± 3.0)	(133 ± 3.0)	(154 ± 3.0)
6th RTI Analysis Day	833	833	833	810	810
PPB	(166 ± 5.0)	(130 ± 2.7)	(144 ± 3.5)	(18.9 ± 0.6)	(15.2 ± 0.5)
NBS Concentration PPB	(155 ± 3.0)	(134 ± 3.0)	(146 ± 3.0)	(17.0 ± 1.0)	(15.0 ± 1.0)

*Number of days after 1st RTI analysis date.

**NBS primary standard was analyzed as internal quality control on each day of RTI analysis unless otherwise indicated. Several different NBS primary standards were used.

***A NBS primary standard was used for calibration for 7th RTI Analysis. Permeation tubes were used for calibration for all previous analyes.

****Seventh analysis was performed by automated cryogenic preconcentration with cryofocusing followed by GC/FID. Previous analysis were performed by direct injection.

STABILITY STUDY FOR GROUP I COMPOUNDS***
CYLINDER I-A14

ACTIVITY	COMPOUND				
	Carbon tetrachloride	Chloroform	Perchloroethylene	Benzene	Vinyl Chloride
MANUFACTURER ANALYSIS					
Theoretical PPB	(91.5)	(362)	(321)	(138)	(150)
1st Analysis Date	12/07/83	12/07/83	12/07/83	12/08/83	12/08/83
PPB	(81.6)	(373)	(301)	(130)	(137)
2nd Analysis Date	12/15/83	12/15/83	12/15/83	12/19/83	12/19/83
PPB	(78.3)	(367)	(312)	(135)	(145)
RTI ANALYSIS****					
1st RTI Analysis Date	1/09/84	1/09/84	1/09/84	1/20/84	1/20/84
PPB	(90.5 ± 2.7)	(339 ± 7.1)	(324 ± 7.8)	(138 ± 4.4)	(154 ± 4.9)
2nd RTI Analysis Day*	57	57	57	54	54
PPB	(90.6 ± 2.7)	(345 ± 7.2)	(342 ± 8.2)	(135 ± 4.3)	(151 ± 4.8)
3rd RTI Analysis Day*	231	231	231	225	225
PPB	(92.3 ± 2.8)	(326 ± 6.8)	(317 ± 7.6)	(140 ± 4.5)	(153 ± 4.9)
4th RTI Analysis Day*	395	395	395	371	371
PPB	(85.7 ± 2.6)	(335 ± 7.0)	(322 ± 7.7)	(137 ± 4.4)	(152 ± 4.9)
5th RTI Analysis Day*					
PPB	(86.2 ± 2.6)	(331 ± 7.0)	(307 ± 7.4)	(137 ± 4.4)	(150 ± 4.8)
6th RTI Analysis Day*	833	833	833	810	810
PPB	(73.9 ± 2.2)	(350 ± 7.4)	(320 ± 7.9)	(127 ± 4.1)	(160 ± 5.2)
7th RTI Analysis Day*	on audit	on audit	on audit	on audit	on audit
PPB					
RTI QUALITY CONTROL**					
1st RTI Analysis Date	1/09/84	1/09/84	1/09/84	1/20/84	1/20/84
PPB	(18.9 ± 0.6)	(9.4 ± 0.2)	(24.4 ± 0.6)	(18.4 ± 0.6)	(14.8 ± 0.5)
NBS Concentration PPB	(19.0 ± 1.0)	(9.00 ± 1.0)	(22.0 ± 1.0)	(17.0 ± 1.0)	(15.0 ± 1.0)

(Continued)

STABILITY STUDY FOR GROUP I COMPOUNDS*** (Continued)
CYLINDER I-A14

ACTIVITY	COMPOUND				
	Carbon tetra-chloride	Chloroform	Perchloro-ethylene	Benzene	Vinyl Chloride
RTI QUALITY CONTROL**					
2nd RTI Analysis Day*	57	57	57	54	54
PPB	(21.5 ± 0.6)	(10.1 ± 0.2)	(26.1 ± 0.6)	(192 ± 6.1)	(192 ± 6.1)
NBS Concentration PPB	(19.0 ± 1.0)	(9.00 ± 1.0)	(22.0 ± 1.0)	(192 ± 4.0)**	(192 ± 4.0)**
3rd RTI Analysis Day*	231	231	231	225	225
PPB	(155 ± 4.7)	(132 ± 2.8)	(147 ± 3.5)	(191 ± 6.1)	(191 ± 6.1)
NBS Concentration PPB	(155 ± 3.0)	(134 ± 3.0)	(146 ± 3.0)	(192 ± 4.0)	(192 ± 4.0)
4th RTI Analysis Day*	395	395	395	371	371
PPB	(155 ± 4.6)	(135 ± 2.8)	(146 ± 3.5)	(199 ± 6.4)	(187 ± 6.0)
NBS Concentration PPB	(155 ± 3.0)	(134 ± 3.0)	(146 ± 3.0)	(192 ± 4.0)	(192 ± 4.0)
5th RTI Analysis Day*	491	491	491	497	497
PPB	(142 ± 4.3)	(115 ± 2.4)	(126 ± 3.0)	(139 ± 4.4)	(149 ± 4.8)
NBS Concentration PPB	(141 ± 3.0)	(120 ± 3.0)	(126 ± 3.0)	(133 ± 3.0)	(154 ± 3.0)
6th RTI Analysis Day*	833	833	833	810	810
PPB	(166 ± 5.0)	(130 ± 2.7)	(144 ± 3.5)	(18.9 ± 0.6)	(15.2 ± 0.5)
NBS Concentration PPB	(155 ± 3.0)	(134 ± 3.0)	(146 ± 3.0)	(17.0 ± 1.0)	(15.0 ± 1.0)
7th RTI Analysis Day*	1337	1337	1337	1337	1337
PPB	(18.7 ± 0.9)	(9.80 ± 0.4)	(23.0 ± 0.6)	(17.3 ± 0.5)	(16.6 ± 0.6)
NBS Concentration PPB	(19.3 ± 1.0)	(9.60 ± 0.2)	(22.3 ± 0.2)	(16.8 ± 0.5)	(16.1 ± 1.0)

*Number of days after 1st RTI analysis date.

**A different NBS standard was analyzed as internal quality control on each day of RTI analysis.

***A NBS primary standard was used for calibration for 7th RTI Analysis. Permeation tubes were used for calibration for all previous analyes.

****Seventh analysis was performed by automated cryogenic preconcentration with cryofocusing followed by GC/FID. Previous analysis were performed by direct injection.

STABILITY STUDY FOR GROUP I COMPOUNDS***
CYLINDER I-A15

ACTIVITY	COMPOUND				
	Carbon tetra-chloride	Chloroform	Perchloro-ethylene	Benzene	Vinyl Chloride
MANUFACTURER ANALYSIS					
Theoretical PPB	(307)	(126)	(102)	(364)	(400)
1st Analysis Date	12/07/83	12/07/83	12/07/83	12/02/83	12/02/83
PPB	(301)	(130)	(98.3)	(350)	(397)
2nd Analysis Date	12/15/83	12/15/83	12/15/83	12/19/83	12/19/83
PPB	(293)	(143)	(119)	(360)	(393)
RTI ANALYSIS****					
1st RTI Analysis Date	1/09/84	1/09/84	1/09/84	1/20/84	1/20/84
PPB	(317 ± 6.7)	(125 ± 2.6)	(108 ± 2.6)	(382 ± 12.2)	(418 ± 13.4)
2nd RTI Analysis Day*	57	57	57	51	51
PPB	(327 ± 9.8)	(133 ± 2.8)	(119 ± 2.9)	(387 ± 12.4)	(404 ± 12.9)
3rd RTI Analysis Day*	231	231	231	227	227
PPB	(299 ± 9.0)	(126 ± 2.6)	(100 ± 2.4)	(391 ± 12.5)	(404 ± 12.9)
4th RTI Analysis Day*	395	395	395	370	370
PPB	(299 ± 9.0)	(126 ± 2.6)	(103 ± 2.5)	(378 ± 12.1)	(409 ± 13.1)
5th RTI Analysis Day*	491	491	491		
PPB	(297 ± 8.9)	(123 ± 2.6)	(104 ± 2.5)	on audit	on audit
6th RTI Analysis Day*	833	833	833	810	810
PPB	(310 ± 9.2)	(117 ± 2.5)	(121 ± 3.0)	(392 ± 12.6)	(426 ± 13.9)
7th RTI Analysis Day*	1337	1337	1337	1337	1337
PPB	(291 ± 8.6)	(123 ± 2.6)	(104 ± 2.6)	(367 ± 11.8)	(416 ± 13.6)
RTI QUALITY CONTROL**					
1st RTI Analysis Date	1/09/84	1/09/84	1/09/84	1/20/84	1/20/84
PPB	(162 ± 4.9)	(130 ± 2.7)	(148 ± 3.6)	(18.4 ± 0.6)	(14.8 ± 0.5)
NBS Concentration PPB	(154 ± 3.0)	(134 ± 3.0)	(145 ± 3.0)	(17.0 ± 1.0)**	(15.0 ± 1.0)**

(Continued)

STABILITY STUDY FOR GROUP I COMPOUNDS*** (Continued)
CYLINDER I-A15

ACTIVITY	COMPOUND				
	Carbon tetrachloride	Chloroform	Perchloroethylene	Benzene	Vinyl Chloride
RTI QUALITY CONTROL**					
2nd RTI Analysis Day PPB	57 (21.5 ± 0.6)	57 (10.1 ± 0.2)	57 (26.1 ± 0.6)	51 (192 ± 6.1)	51 (192 ± 6.1)
NBS Concentration** PPB	(19.0 ± 1.0)	(9.00 ± 1.0)	(22.0 ± 1.0)	(192 ± 4.0)**	(192 ± 4.0)**
3rd RTI Analysis Day PPB	231 (155 ± 4.7)	231 (132 ± 2.8)	231 (147 ± 3.5)	227 (191 ± 6.1)	227 (191 ± 6.1)
NBS Concentration PPB	(155 ± 3.0)	(134 ± 3.0)	(146 ± 3.0)	(192 ± 4.0)	(192 ± 4.0)
4th RTI Analysis Day PPB	395 (154 ± 4.6)	395 (135 ± 2.8)	395 (145 ± 3.5)	370 (200 ± 6.4)	370 (195 ± 6.2)
NBS Concentration PPB	(155 ± 3.0)	(134 ± 3.0)	(146 ± 3.0)	(192 ± 4.0)	(192 ± 4.0)
5th RTI Analysis Day PPB	491 (142 ± 4.3)	491 (115 ± 2.4)	491 (126 ± 3.0)	497 (139 ± 4.4)	497 (149 ± 4.8)
NBS Concentration PPB	(141 ± 3.0)	(120 ± 3.0)	(126 ± 3.0)	(133 ± 3.0)	(154 ± 3.0)
6th RTI Analysis Day PPB	833 (166 ± 5.0)	833 (130 ± 2.7)	833 (144 ± 3.5)	810 (143 ± 4.6)	810 (156 ± 5.1)
NBS Concentration PPB	(155 ± 3.0)	(134 ± 3.0)	(146 ± 3.0)	(133 ± 3.0)	(154 ± 3.0)
7th RTI Analysis Day PPB	1337 (18.3 ± 0.9)	1337 (9.54 ± 0.2)	1337 (22.7 ± 0.6)	1337 (16.6 ± 0.5)	1337 (15.8 ± 0.5)
NBS Concentration PPB	(19.3 ± 1.0)	(9.60 ± 0.2)	(22.8 ± 0.2)	(16.8 ± 0.5)	(16.1 ± 1.0)

*Number of days after 1st RTI analysis date.

**A different NBS standard was analyzed as internal quality control on each day of RTI analysis.

***A NBS primary standard was used for calibration for 7th RTI Analysis. Permeation tubes were used for calibration for all previous analyes.

****Seventh analysis was performed by automated cryogenic preconcentration with cryofocusing followed by GC/FID. Previous analysis were performed by direct injection.

STABILITY STUDY FOR GROUP I COMPOUNDS***
CYLINDER I-A16

ACTIVITY	COMPOUND				
	Carbon tetra-chloride	Chloroform	Perchloro-ethylene	Benzene	Vinyl Chloride
MANUFACTURER ANALYSIS					
Theoretical PPB	(304)	(125)	(101)	(360)	(400)
1st Analysis Date	12/05/83	12/05/83	12/05/83	12/12/83	12/12/83
PPB	(297)	(120)	(91.5)	(344)	(397)
2nd Analysis Date	12/15/83	12/15/83	12/15/83	12/19/83	12/19/83
PPB	(293)	(135)	(87.9)	(355)	(382)
RTI ANALYSIS****					
1st RTI Analysis Date	1/09/84	1/09/84	1/09/84	1/20/84	1/20/84
PPB	(314 ± 9.4)	(122 ± 2.6)	(107 ± 2.6)	(377 ± 12.1)	(418 ± 13.4)
2nd RTI Analysis Day*	57	57	57	51	51
PPB	(323 ± 9.7)	(128 ± 2.7)	(119 ± 2.9)	(379 ± 12.1)	(403 ± 12.9)
3rd RTI Analysis Day*					
PPB	on audit	on audit	on audit	on audit	on audit
4th RTI Analysis Day*	395	395	395	370	370
PPB	(296 ± 8.9)	(126 ± 2.6)	(103 ± 2.5)	(368 ± 11.8)	(408 ± 13.1)
5th RTI Analysis Day*	491	491	491		
PPB	(295 ± 8.9)	(121 ± 2.5)	(104 ± 2.5)	on audit	on audit
6th RTI Analysis Day*	833	833	833	810	810
PPB	(307 ± 9.1)	(114 ± 2.4)	(120.3 ± 2.9)	(389 ± 12.5)	(423 ± 13.8)
7th RTI Analysis Day*	on audit	on audit	on audit	on audit	on audit
PPB					
RTI QUALITY CONTROL**					
1st RTI Analysis Date	1/09/84	1/09/84	1/09/84	1/20/84	1/20/84
PPB	(162 ± 4.9)	(130 ± 2.7)	(148 ± 3.6)	(18.4 ± 0.6)	(14.8 ± 0.5)
NBS Concentration					
PPB	(154 ± 3.0)	(134 ± 3.0)	(145 ± 3.0)	(17.0 ± 1.0)**	(15.0 ± 1.0)**

(Continued)

STABILITY STUDY FOR GROUP I COMPOUNDS*** (Continued)
CYLINDER I-A16

ACTIVITY	COMPOUND				
	Carbon tetra-chloride	Chloroform	Perchloro-ethylene	Benzene	Vinyl Chloride
RTI QUALITY CONTROL**					
2nd RTI Analysis Day	57	57	57	51	51
PPB	(21.5 ± 0.6)	(10.1 ± 0.2)	(26.1 ± 0.6)	(192 ± 6.1)	(192 ± 6.1)
NBS Concentration**					
PPB	(19.0 ± 1.0)	(9.00 ± 1.0)	(22.0 ± 1.0)	(192 ± 4.0)**	(192 ± 4.0)**
3rd RTI Analysis Day	231	231	231	227	227
PPB	(155 ± 4.7)	(132 ± 2.8)	(147 ± 3.5)	(191 ± 6.1)	(191 ± 6.1)
NBS Concentration					
PPB	(155 ± 3.0)	(134 ± 3.0)	(146 ± 3.0)	(192 ± 4.0)	(192 ± 4.0)
4th RTI Analysis Day	395	395	395	370	370
PPB	(154 ± 4.6)	(135 ± 2.8)	(145 ± 3.5)	(200 ± 6.4)	(195 ± 6.2)
NBS Concentration					
PPB	(155 ± 3.0)	(134 ± 3.0)	(146 ± 3.0)	(192 ± 4.0)	(192 ± 4.0)
5th RTI Analysis Day	491	491	491	497	497
PPB	(142 ± 4.3)	(115 ± 2.4)	(126 ± 3.0)	(139 ± 4.4)	(149 ± 4.8)
NBS Concentration					
PPB	(141 ± 3.0)	(120 ± 3.0)	(126 ± 3.0)	(133 ± 3.0)	(154 ± 3.0)
6th RTI Analysis Day	833	833	833	810	810
PPB	(166 ± 5.0)	(130 ± 2.7)	(144 ± 3.5)	(143 ± 4.6)	(156 ± 5.1)
NBS Concentration					
PPB	(155 ± 3.0)	(134 ± 3.0)	(146 ± 3.0)	(133 ± 3.0)	(154 ± 3.0)
7th RTI Analysis Day	1337	1337	1337	1337	1337
PPB	(18.7 ± 0.9)	(9.80 ± 0.4)	(23.0 ± 0.6)	(17.3 ± 0.5)	(16.6 ± 0.6)
NBS Concentration					
PPB	(19.3 ± 1.0)	(9.60 ± 0.2)	(22.8 ± 0.2)	(16.8 ± 0.5)	(16.1 ± 1.0)

*Number of days after 1st RTI analysis date.

**A different NBS standard was analyzed as internal quality control on each day of RTI analysis.

***A NBS primary standard was used for calibration for 7th RTI Analysis. Permeation tubes were used for calibration for all previous analyes.

****Seventh analysis was performed by automated cryogenic preconcentration with cryofocusing followed by GC/FID. Previous analysis were performed by direct injection.

STABILITY STUDY FOR GROUP I COMPOUNDS
CYLINDER I-A17

ACTIVITY		COMPOUND				
		Carbon tetra-chloride	Chloroform	Perchloro-ethylene	Benzene	Vinyl Chloride
MANUFACTURER ANALYSIS						
Theoretical	PPB	(1500)	(800)	(1500)	(800)	(1500)
1st Analysis	Date	9/26/85	9/26/85	9/26/85	9/26/85	9/26/85
	PPB	(1502)	(837)	(1441)	(805)	(1489)
RTI ANALYSIS***						
1st RTI Analysis	Date	5/07/86	5/07/86	5/07/86	5/07/86	5/07/86
	PPB	(1585 ± 48)	(904 ± 19)	(1642 ± 40)	(904 ± 29)	(1648 ± 53)
2nd RTI Analysis	Day*	68	68	68	68	68
	PPB	(1584 ± 48)	(844 ± 18)	(1645 ± 40)	(881 ± 28)	(1585 ± 51)
3rd RTI Analysis	Day*	153	153	153	153	153
	PPB	(1565 ± 29)	(859 ± 21)	(1468 ± 47)	(808 ± 11)	(1542 ± 25)
4th RTI Analysis	Day*	507	507	507	507	507
	PPB	(1554 ± 30)	(840 ± 22)	(1614 ± 48)	(883 ± 12)	(1527 ± 26)
RTI QUALITY CONTROL**						
1st RTI Analysis	Date	5/07/86	5/07/86	5/07/86	5/07/86	5/07/86
	PPB	(2279 ± 68)	(2328 ± 49)	(2044 ± 49)	(2868 ± 92)	(2363 ± 76)
NBS Concen.	PPB	(2095 ± 16)	(2269 ± 10)	(2096 ± 13)	(2830 ± 9)	(2486 ± 27)
2nd RTI Analysis	Day	68	68	68	68	68
	PPB	(2226 ± 67)	(2284 ± 48)	(2194 ± 53)	(2909 ± 93)	(2484 ± 80)
NBS Concen.	PPB	(2095 ± 16)	(2269 ± 10)	(2096 ± 13)	(2830 ± 9.0)	(2486 ± 27)
3rd RTI Analysis	Day	153	153	153	153	153
	PPB	(2505 ± 50)	(2985 ± 81)	(2784 ± 89)	(2534 ± 33)	(2472 ± 42)
NBS Concen.	PPB	(2513 ± 19)	(2988 ± 13)	(2800 ± 17)	(2526 ± 8.0)	(2469 ± 27)
4th RTI Analysis	Day	507	507	507	507	507
	PPB	(2472 ± 26)	(2272 ± 11)	(2106 ± 14)	(2821 ± 8.0)	(2472 ± 28)
NBS Concen.	PPB	(2486 ± 27)	(2269 ± 10)	(2096 ± 13)	(2830 ± 9.0)	(2486 ± 27)

*Number of days after 1st RTI analysis date.

**NBS primary standard was analyzed as internal quality control on each day of RTI analysis.

***Fourth analysis was performed by automated cryogenic preconcentration with cryofocusing followed by GC/FID. The remaining analysis was performed by direct injection. Calibrations was performed using a NBS primary standard.

STABILITY STUDY FOR GROUP I COMPOUNDS
CYLINDER I-A18

ACTIVITY		COMPOUND				
		Carbon tetra-chloride	Chloroform	Perchloro-ethylene	Benzene	Vinyl Chloride
MANUFACTURER ANALYSIS						
Theoretical	PPB	(8000)	(4000)	(8000)	(8000)	(6000)
1st Analysis	Date	9/26/85	9/26/85	9/26/85	9/26/85	9/26/85
	PPB	(8400)	(3877)	(7938)	(7960)	(6061)
RTI ANALYSIS***						
1st RTI Analysis	Date	5/07/86	5/07/86	5/07/86	5/07/86	5/07/86
	PPB	(9386 ± 284)	(4418 ± 94)*	(9486 ± 231)	(9458 ± 301)	(6555 ± 211)
2nd RTI Analysis	Day*	68	68	68	68	68
	PPB	(9400 ± 285)	(4318 ± 92)*	(9617 ± 234)	(9359 ± 297)	(6641 ± 214)
3rd RTI Analysis	Day*	153	153	153	153	153
	PPB	(8041 ± 161)	(3991 ± 108)	(8906 ± 256)	(9056 ± 105)	(6461 ± 101)
4th RTI Analysis	Day*	506	506	506	506	506
	PPB	(8082 ± 162)	(4111 ± 109)	(8938 ± 255)	(9082 ± 106)	(6468 ± 102)
RTI QUALITY CONTROL**						
1st RTI Analysis	Date	5/07/86	5/07/86	5/07/86	5/07/86	5/07/86
	PPB	(2279 ± 68)	(2328 ± 49)	(2044 ± 49)	(2868 ± 92)	(2363 ± 76)
NBS Concen.	PPB	(2095 ± 16)	(2269 ± 10)	(2096 ± 13)	(2830 ± 9.0)	(2486 ± 27)
2nd RTI Analysis	Day	68	68	68	68	68
	PPB	(2226 ± 67)	(2284 ± 48)	(2194 ± 53)	(2909 ± 93)	(2484 ± 80)
NBS Concen.	PPB	(2095 ± 16)	(2269 ± 10)	(2096 ± 13)	(2830 ± 9.0)	(2486 ± 27)
3rd RTI Analysis	Day	153	153	153	153	153
	PPB	(2505 ± 50)	(2985 ± 81)	(2784 ± 89)	(2534 ± 33)	(2472 ± 42)
NBS Concen.	PPB	(2513 ± 19)	(2988 ± 13)	(2800 ± 17)	(2526 ± 8.0)	(2469 ± 27)
4th RTI Analysis	Day	506	506	506	506	506
	PPB	(2100 ± 17)	(2259 ± 9)	(2109 ± 14)	(2833 ± 10)	(2493 ± 28)
NBS Concen.	PPB	(2095 ± 16)	(2269 ± 10)	(2096 ± 13)	(2830 ± 9.0)	(2486 ± 27)

*Number of days after 1st RTI analysis date.

**NBS primary standard was analyzed as internal quality control on each day of RTI analysis.

***Fourth analysis was performed by automated cryogenic preconcentration with cryofocusing followed by GC/FID. The remaining analysis was performed by direct injection. Calibrations was performed using a NBS primary standard.

STABILITY STUDY FOR GROUP I COMPOUNDS
CYLINDER I-A19

ACTIVITY		COMPOUND				
		Carbon tetrachloride	Chloroform	Perchloroethylene	Benzene	Vinyl Chloride
MANUFACTURER ANALYSIS						
Theoretical	PPB	(6000)	(8000)	(4000)	(4000)	(8000)
1st Analysis	Date	9/26/85	9/26/85	9/26/85	9/26/85	9/26/85
	PPB	(6084)	(7854)	(4155)	(4069)	(7824)
RTI ANALYSIS***						
1st RTI Analysis	Date	5/07/86	5/07/86	5/07/86	5/07/86	5/07/86
	PPB	(8062 ± 244)	(9593 ± 205)	(4121 ± 100)	(4065 ± 129)	(9463 ± 304)
2nd RTI Analysis	Day*	68	68	68	68	68
	PPB	(7240 ± 219)	(9730 ± 208)	(4579 ± 111)	(4667 ± 148)	(8999 ± 290)
3rd RTI Analysis	Day*	153	153	153	153	153
	PPB	(7118 ± 120)	(8886 ± 213)	(4131 ± 132)	(4072 ± 53)	(8957 ± 134)
4th RTI Analysis	Day*	498	498	498	598	598
	PPB	(7270 ± 121)	(8987 ± 214)	(4160 ± 133)	(4084 ± 54)	(9024 ± 154)
RTI QUALITY CONTROL**						
1st RTI Analysis	Date	5/07/86	5/07/86	5/07/86	5/07/86	5/07/86
	PPB	(2279 ± 68)	(2328 ± 49)	(2044 ± 49)	(2868 ± 92)	(2363 ± 76)
NBS Concen.	PPB	(2095 ± 16)	(2269 ± 10)	(2096 ± 13)	(2830 ± 9.0)	(2486 ± 27)
2nd RTI Analysis	Day	68	68	68	68	68
	PPB	(2226 ± 67)	(2284 ± 48)	(2194 ± 53)	(2909 ± 93)	(2484 ± 80)
NBS Concen.	PPB	(2095 ± 16)	(2269 ± 10)	(2096 ± 13)	(2830 ± 9.0)	(2486 ± 27)
3rd RTI Analysis	Day	153	153	153	153	153
	PPB	(2505 ± 50)	(2985 ± 81)	(2784 ± 89)	(2534 ± 33)	(2472 ± 42)
NBS Concen.	PPB	(2513 ± 19)	(2988 ± 13)	(2800 ± 17)	(2526 ± 8.0)	(2469 ± 27)
4th RTI Analysis	Day	498	498	498	498	498
	PPB	(2092 ± 15)	(2278 ± 11)	(2105 ± 14)	(2839 ± 10)	(2482 ± 26)
NBS Concen.	PPB	(2095 ± 16)	(2269 ± 10)	(2096 ± 13)	(2830 ± 9.0)	(2486 ± 27)

*Number of days after 1st RTI analysis date.

**NBS primary standard was analyzed as internal quality control on each day of RTI analysis.

***Fourth analysis was performed by automated cryogenic preconcentration with cryofocusing followed by GC/FID. The remaining analysis was performed by direct injection. Calibrations was performed using a NBS primary standard.

STABILITY STUDY FOR GROUP I COMPOUNDS
CYLINDER I-A20

ACTIVITY		COMPOUND				
		Carbon tetra-chloride	Chloroform	Perchloro-ethylene	Benzene	Vinyl Chloride
MANUFACTURER ANALYSIS						
Theoretical	PPB	(6000)	(8000)	(4000)	(4000)	(8000)
1st Analysis	Date	9/26/85	9/26/85	9/26/85	9/26/85	9/26/85
	PPB	(6012)	(7829)	(4103)	(4055)	(7841)
RTI ANALYSIS***						
1st RTI Analysis	Date	5/07/86	5/07/86	5/07/86	5/07/86	5/07/86
	PPB	(6731 ± 204)	(9356 ± 200)	(4764 ± 116)	(4295 ± 137)	(9064 ± 292)
2nd RTI Analysis	Day*	68	68	68	68	68
	PPB	(7340 ± 222)	(9521 ± 203)	(4739 ± 115)	(4784 ± 152)	(9142 ± 294)
3rd RTI Analysis	Day*	153	153	153	153	153
	PPB	(6913 ± 118)	(7904 ± 213)	(4618 ± 129)	(3998 ± 52)	(7844 ± 133)
4th RTI Analysis	Day*	498	498	498	498	498
	PPB	(7114 ± 119)	(7984 ± 214)	(4687 ± 130)	(4017 ± 152)	(8014 ± 133)
RTI QUALITY CONTROL**						
1st RTI Analysis	Date	5/07/86	5/07/86	5/07/86	5/07/86	5/07/86
	PPB	(2279 ± 68)	(2328 ± 49)	(2044 ± 49)	(2868 ± 92)	(2363 ± 76)
NBS Concen.	PPB	(2095 ± 16)	(2269 ± 10)	(2096 ± 13)	(2830 ± 9.0)	(2486 ± 27)
2nd RTI Analysis	Day	68	68	68	68	68
	PPB	(2226 ± 67)	(2284 ± 48)	(2194 ± 53)	(2909 ± 93)	(2484 ± 80)
NBS Concen.	PPB	(2095 ± 16)	(2269 ± 10)	(2096 ± 13)	(2830 ± 9.0)	(2486 ± 27)
3rd RTI Analysis	Day	153	153	153	153	153
	PPB	(2505 ± 50)	(2985 ± 81)	(2784 ± 89)	(2534 ± 33)	(2472 ± 42)
NBS Concen.	PPB	(2513 ± 19)	(2988 ± 13)	(2800 ± 17)	(2526 ± 8.0)	(2469 ± 27)
4th RTI Analysis	Day	498	498	498	498	498
	PPB	(2092 ± 15)	(2278 ± 11)	(2105 ± 14)	(2839 ± 10)	(2482 ± 26)
NBS Concen.	PPB	(2095 ± 16)	(2269 ± 10)	(2096 ± 13)	(2830 ± 9.0)	(2486 ± 27)

*Number of days after 1st RTI analysis date.

**NBS primary standard was analyzed as internal quality control on each day of RTI analysis.

***Fourth analysis was performed by automated cryogenic preconcentration with cryofocusing followed by GC/FID. The remaining analysis was performed by direct injection. Calibrations was performed using a NBS primary standard.

STABILITY STUDY FOR GROUP I COMPOUNDS
CYLINDER I-A21

ACTIVITY	COMPOUND				
	Carbon tetrachloride	Chloroform	Perchloroethylene	Benzene	Vinyl Chloride
MANUFACTURER ANALYSIS					
Theoretical PPB	(3000)	(6000)	(3000)	(6000)	(4000)
1st Analysis Date	9/26/85	9/26/85	9/26/85	9/26/85	9/26/85
PPB	(2990)	(5979)	(3131)	(6139)	(4010)
RTI ANALYSIS* **					
1st RTI Analysis Date	5/07/86	5/07/86	5/07/86	5/07/86	5/07/86
PPB	(3220 ± 98)	(6277 ± 134)	(3157 ± 77)	(7127 ± 227)	(3994 ± 129)
2nd RTI Analysis Day*	68	68	68	68	68
PPB	(3246 ± 98)	(6808 ± 145)	(3416 ± 83)	(7008 ± 223)	(4238 ± 137)
3rd RTI Analysis Day*	153	153	153	153	153
PPB	(2968 ± 59)	(5950 ± 161)	(2940 ± 94)	(6024 ± 78)	(3983 ± 68)
4th RTI Analysis Day*	on audit	on audit	on audit	on audit	on audit
PPB					
RTI QUALITY CONTROL**					
1st RTI Analysis Date	5/07/86	5/07/86	5/07/86	5/07/86	5/07/86
PPB	(2279 ± 68)	(2328 ± 49)	(2044 ± 49)	(2868 ± 92)	(2363 ± 76)
NBS Concen. PPB	(2095 ± 16)	(2269 ± 10)	(2096 ± 13)	(2830 ± 9.0)	(2436 ± 27)
2nd RTI Analysis Day	68	68	68	68	68
PPB	(2226 ± 67)	(2284 ± 48)	(2194 ± 53)	(2909 ± 93)	(2484 ± 80)
NBS Concen. PPB	(2095 ± 16)	(2269 ± 10)	(2096 ± 13)	(2830 ± 9.0)	(2486 ± 27)
3rd RTI Analysis Day	153	153	153	153	153
PPB	(2505 ± 50)	(2985 ± 81)	(2784 ± 89)	(2534 ± 33)	(2472 ± 42)
NBS Concen. PPB	(2513 ± 19)	(2988 ± 13)	(2800 ± 17)	(2526 ± 8.0)	(2469 ± 27)
4th RTI Analysis Day	498	498	498	498	498
PPB	(2092 ± 15)	(2278 ± 11)	(2105 ± 14)	(2839 ± 10)	(2482 ± 26)
NBS Concen. PPB	(2095 ± 16)	(2269 ± 10)	(2096 ± 13)	(2830 ± 9.0)	(2486 ± 27)

*Number of days after 1st RTI analysis date.

**NBS primary standard was analyzed as internal quality control on each day of RTI analysis.

***Fourth analysis was performed by automated cryogenic preconcentration with cryofocusing followed by GC/FID. The remaining analysis was performed by direct injection. Calibrations was performed using a NBS primary standard.

STABILITY STUDY FOR GROUP I COMPOUNDS
CYLINDER I-A22

ACTIVITY	COMPOUND				
	Carbon tetrachloride	Chloroform	Perchloroethylene	Benzene	Vinyl Chloride
MANUFACTURER ANALYSIS					
Theoretical PPB	(800)	(1500)	(800)	(1500)	(800)
1st Analysis Date	9/26/85	9/26/85	9/26/85	9/26/85	9/26/85
PPB	(796)	(1461)	(795)	(1497)	(783)
RTI ANALYSIS* **					
1st RTI Analysis Date	5/07/86	5/07/86	5/07/86	5/07/86	5/07/86
PPB	(854 ± 26)	(1365 ± 29)	(784 ± 19)	(1533 ± 49)	(813 ± 26)
2nd RTI Analysis Day*	68	68	68	68	68
PPB	(839 ± 25)	(1539 ± 33)	(846 ± 21)	(1587 ± 51)	(823 ± 27)
3rd RTI Analysis Day*	153	153	153	153	153
PPB	(774 ± 15)	(1506 ± 41)	(840 ± 27)	(1559 ± 20)	(805 ± 14)
4th RTI Analysis Day*	on audit	on audit	on audit	on audit	on audit
PPB					
RTI QUALITY CONTROL**					
1st RTI Analysis Date	5/07/86	5/07/86	5/07/86	5/07/86	5/07/86
PPB	(2279 ± 68)	(2328 ± 49)	(2044 ± 49)	(2868 ± 92)	(2363 ± 76)
NBS Concen. PPB	(2095 ± 16)	(2269 ± 10)	(2096 ± 13)	(2830 ± 9.0)	(2486 ± 27)
2nd RTI Analysis Day	68	68	68	68	68
PPB	(2226 ± 67)	(2284 ± 48)	(2194 ± 53)	(2909 ± 93)	(2484 ± 80)
NBS Concen. PPB	(2095 ± 16)	(2269 ± 10)	(2096 ± 13)	(2830 ± 9.0)	(2486 ± 27)
3rd RTI Analysis Day	153	153	153	153	153
PPB	(2505 ± 50)	(2985 ± 81)	(2784 ± 89)	(2534 ± 33)	(2472 ± 42)
NBS Concen. PPB	(2513 ± 19)	(2988 ± 13)	(2800 ± 17)	(2526 ± 8.0)	(2469 ± 27)
4th RTI Analysis Day	498	498	498	498	498
PPB	(2092 ± 15)	(2278 ± 11)	(2106 ± 14)	(2839 ± 10)	(2482 ± 26)
NBS Concen. PPB	(2095 ± 16)	(2269 ± 10)	(2096 ± 13)	(2830 ± 9.0)	(2486 ± 27)

*Number of days after 1st RTI analysis date.

**NBS primary standard was analyzed as internal quality control on each day of RTI analysis.

***Fourth analysis was performed by automated cryogenic preconcentration with cryofocusing followed by GC/FID. The remaining analysis was performed by direct injection. Calibrations was performed using a NBS primary standard.

STABILITY STUDY FOR GROUP I COMPOUNDS
CYLINDER I-A23

ACTIVITY		COMPOUND				
		Carbon tetrachloride	Chloroform	Perchloroethylene	Benzene	Vinyl Chloride
MANUFACTURER ANALYSIS						
Theoretical	PPB	(800)	(1500)	(800)	(1500)	(800)
1st Analysis	Date	9/26/85	9/26/85	9/26/85	9/26/85	9/26/85
	PPB	(789)	(1431)	(789)	(1459)	(780)
RTI ANALYSIS***						
1st RTI Analysis	Date	5/07/86	5/07/86	5/07/86	5/07/86	5/07/86
	PPB	(822 ± 25)	(1313 ± 28)	(789 ± 19)	(1560 ± 50)	(857 ± 28)
2nd RTI Analysis	Day*	68	68	68	68	68
	PPB	(839 ± 25)	(1492 ± 32)	(832 ± 20)	(1560 ± 50)	(834 ± 27)
3rd RTI Analysis	Day*	153	153	153	153	153
	PPB	(783 ± 16)	(1453 ± 39)	(806 ± 26)	(1486 ± 19)	(800 ± 14)
4th RTI Analysis	Day*	498	498	498	498	498
	PPB	(780 ± 15)	(1421 ± 38)	(813 ± 27)	(1474 ± 18)	(786 ± 15)
RTI QUALITY CONTROL**						
1st RTI Analysis	Date	5/07/86	5/07/86	5/07/86	5/07/86	5/07/86
	PPB	(2279 ± 68)	(2328 ± 49)	(2044 ± 49)	(2868 ± 92)	(2363 ± 76)
NBS Concen.	PPB	(2095 ± 16)	(2269 ± 10)	(2096 ± 13)	(2830 ± 9.0)	(2486 ± 27)
2nd RTI Analysis	Day	68	68	68	68	68
	PPB	(2226 ± 67)	(2284 ± 48)	(2194 ± 53)	(2909 ± 93)	(2484 ± 80)
NBS Concen.	PPB	(2095 ± 16)	(2269 ± 10)	(2096 ± 13)	(2830 ± 9.0)	(2486 ± 27)
3rd RTI Analysis	Day	153	153	153	153	153
	PPB	(2505 ± 50)	(2985 ± 81)	(2784 ± 89)	(2534 ± 33)	(2472 ± 42)
NBS Concen.	PPB	(2513 ± 19)	(2988 ± 13)	(2800 ± 17)	(2526 ± 8.0)	(2469 ± 27)
4th RTI Analysis	Day	498	498	498	498	498
	PPB	(2092 ± 15)	(2278 ± 11)	(2105 ± 14)	(2839 ± 10)	(2482 ± 26)
NBS Concen.	PPB	(2095 ± 16)	(2269 ± 10)	(2096 ± 13)	(2830 ± 9.0)	(2486 ± 27)

*Number of days after 1st RTI analysis date.

**NBS primary standard was analyzed as internal quality control on each day of RTI analysis.

***Fourth analysis was performed by automated cryogenic preconcentration with cryofocusing followed by GC/FID. The remaining analysis was performed by direct injection. Calibrations was performed using a NBS primary standard.

STABILITY STUDY FOR GROUP I COMPOUNDS
CYLINDER I-A24

ACTIVITY		COMPOUND				
		Carbon tetra-chloride	Chloroform	Perchloro-ethylene	Benzene	Vinyl Chloride
MANUFACTURER ANALYSIS						
Theoretical	PPB	(1500)	(800)	(1500)	(800)	(1500)
1st Analysis	Date	9/26/85	9/26/85	9/26/85	9/26/85	9/26/85
	PPB	(1480)	(811)	(1495)	(798)	(1491)
RTI ANALYSIS***						
1st RTI Analysis	Date	5/07/86	5/07/86	5/07/86	5/07/86	5/07/86
	PPB	(1582 ± 48)	(803 ± 17)	(1534 ± 37)	(760 ± 24)	(1492 ± 48)
2nd RTI Analysis	Day*	68	68	68	68	68
	PPB	(1571 ± 47)	(830 ± 18)	(1530 ± 37)	(852 ± 27)	(1535 ± 50)
3rd RTI Analysis	Day*	153	153	153	153	153
	PPB	(1553 ± 29)	(784 ± 21)	(1503 ± 46)	(824 ± 11)	(1498 ± 25)
4th RTI Analysis	Day*	507	507	507	507	507
	PPB	(1555 ± 30)	(801 ± 20)	(1512 ± 47)	(815 ± 12)	(1481 ± 24)
RTI QUALITY CONTROL**						
1st RTI Analysis	Date	5/07/86	5/07/86	5/07/86	5/07/86	5/07/86
	PPB	(2279 ± 68)	(2328 ± 49)	(2044 ± 49)	(2868 ± 92)	(2363 ± 76)
NBS Concen.	PPB	(2095 ± 16)	(2269 ± 10)	(2096 ± 13)	(2830 ± 9.0)	(2486 ± 27)
2nd RTI Analysis	Day	68	68	68	68	68
	PPB	(2226 ± 67)	(2284 ± 48)	(2194 ± 53)	(2909 ± 93)	(2484 ± 80)
NBS Concen.	PPB	(2095 ± 16)	(2269 ± 10)	(2096 ± 13)	(2830 ± 9.0)	(2486 ± 27)
3rd RTI Analysis	Day	153	153	153	153	153
	PPB	(2505 ± 50)	(2985 ± 81)	(2784 ± 89)	(2534 ± 33)	(2472 ± 42)
NBS Concen.	PPB	(2513 ± 19)	(2988 ± 13)	(2800 ± 17)	(2526 ± 8.0)	(2469 ± 27)
4th RTI Analysis	Day	507	507	507	507	507
	PPB	(2472 ± 26)	(2272 ± 11)	(2106 ± 14)	(2821 ± 8.0)	(2472 ± 28)
NBS Concen.	PPB	(2486 ± 27)	(2269 ± 10)	(2096 ± 13)	(2830 ± 9.0)	(2486 ± 27)

*Number of days after 1st RTI analysis date.

**NBS primary standard was analyzed as internal quality control on each day of RTI analysis.

***Fourth analysis was performed by automated cryogenic preconcentration with cryofocusing followed by GC/FID. The remaining analysis was performed by direct injection. Calibrations was performed using a NBS primary standard.

STABILITY STUDY FOR GROUP I COMPOUNDS
CYLINDER I-A25

ACTIVITY		COMPOUND				
		Carbon tetra-chloride	Chloroform	Perchloro-ethylene	Benzene	Vinyl Chloride
MANUFACTURER ANALYSIS						
Theoretical	PPB	(4000)	(3000)	(6000)	(3000)	(3000)
1st Analysis	Date	9/26/85	9/26/85	9/26/85	9/26/85	9/26/85
	PPB	(4166)	(2986)	(6095)	(3014)	(2932)
RTI ANALYSIS***						
1st RTI Analysis	Date	5/07/86	5/07/86	5/07/86	5/07/86	5/07/86
	PPB	(4582 ± 138)	(3032 ± 66)	(6770 ± 165)	(3047 ± 97)	(3574 ± 116)
2nd RTI Analysis	Day*	68	68	68	68	68
	PPB	(4308 ± 130)	(3200 ± 68)	(6765 ± 164)	(3283 ± 104)	(3122 ± 101)
3rd RTI Analysis	Day*	153	153	153	153	153
	PPB	(3918 ± 78)	(2924 ± 39)	(5881 ± 188)	(2964 ± 39)	(2952 ± 50)
4th RTI Analysis	Day*	on audit	on audit	on audit	on audit	on audit
	PPB					
RTI QUALITY CONTROL**						
1st RTI Analysis	Date	5/07/86	5/07/86	5/07/86	5/07/86	5/07/86
	PPB	(2279 ± 68)	(2328 ± 49)	(2044 ± 49)	(2868 ± 92)	(2363 ± 76)
NBS Concen.	PPB	(2095 ± 16)	(2269 ± 10)	(2096 ± 13)	(2830 ± 9.0)	(2486 ± 27)
2nd RTI Analysis	Day	68	68	68	68	68
	PPB	(2226 ± 67)	(2284 ± 48)	(2194 ± 53)	(2909 ± 93)	(2484 ± 80)
NBS Concen.	PPB	(2095 ± 16)	(2269 ± 10)	(2096 ± 13)	(2830 ± 9.0)	(2486 ± 27)
3rd RTI Analysis	Day	153	153	153	153	153
	PPB	(2505 ± 50)	(2985 ± 81)	(2784 ± 89)	(2534 ± 33)	(2472 ± 42)
NBS Concen.	PPB	(2513 ± 19)	(2988 ± 13)	(2800 ± 17)	(2526 ± 8.0)	(2469 ± 27)
4th RTI Analysis	Day	507	507	507	507	507
	PPB	(2472 ± 26)	(2272 ± 11)	(2106 ± 14)	(2821 ± 8.0)	(2472 ± 28)
NBS Concen.	PPB	(2486 ± 27)	(2269 ± 10)	(2096 ± 13)	(2830 ± 9.0)	(2486 ± 27)

*Number of days after 1st RTI analysis date.
**NBS primary standard was analyzed as internal quality control on each day of RTI analysis.
***Fourth analysis was performed by automated cryogenic preconcentration with cryofocusing followed by GC/FID. The remaining analysis was performed by direct injection. Calibrations was performed using a NBS primary standard.

STABILITY STUDY FOR GROUP I COMPOUNDS
CYLINDER I-A26

ACTIVITY	COMPOUND				
	Carbon tetrachloride	Chloroform	Perchloroethylene	Benzene	Vinyl Chloride
MANUFACTURER ANALYSIS					
Theoretical PPB	(8000)	(4000)	(8000)	(8000)	(6000)
1st Analysis Date	9/26/85	9/26/85	9/26/85	9/26/85	9/26/85
PPB	(8506)	(3892)	(7810)	(7951)	(6037)
RTI ANALYSIS* **					
1st RTI Analysis Date	5/07/86	5/07/86	5/07/86	5/07/86	5/07/86
PPB	(9734 ± 294)	(4243 ± 90)	(9753 ± 236)	(9540 ± 302)	(7229 ± 234)
2nd RTI Analysis Day*	68	68	68	68	68
PPB	(9632 ± 291)	(4405 ± 94)	(9788 ± 237)	(9491 ± 301)	(7009 ± 227)
3rd RTI Analysis Day*	154	154	154	154	154
PPB	(8028 ± 161)	(3992 ± 108)	(8209 ± 250)	(9116 ± 104)	(6952 ± 101)
4th RTI Analysis Day*	498	498	498	498	498
PPB	(8076 ± 162)	(4160 ± 109)	(8406 ± 251)	(9209 ± 105)	(6914 ± 102)
RTI QUALITY CONTROL**					
1st RTI Analysis Date	5/07/86	5/07/86	5/07/86	5/07/86	5/07/86
PPB	(2279 ± 68)	(2328 ± 49)	(2044 ± 49)	(2868 ± 92)	(2363 ± 76)
NBS Concen. PPB	(2095 ± 16)	(2269 ± 10)	(2096 ± 13)	(2830 ± 9.0)	(2486 ± 27)
2nd RTI Analysis Day	68	68	68	68	68
PPB	(2226 ± 67)	(2284 ± 48)	(2194 ± 53)	(2909 ± 93)	(2484 ± 80)
NBS Concen. PPB	(2095 ± 16)	(2269 ± 10)	(2096 ± 13)	(2830 ± 9.0)	(2486 ± 27)
3rd RTI Analysis Day	153	153	153	153	153
PPB	(2509 ± 50)	(2980 ± 80)	(2794 ± 89)	(2533 ± 33)	(2465 ± 42)
NBS Concen. PPB	(2513 ± 19)	(2988 ± 13)	(2800 ± 17)	(2526 ± 8.0)	(2469 ± 27)
4th RTI Analysis Day	498	498	498	498	498
PPB	(2092 ± 15)	(2278 ± 11)	(2105 ± 14)	(2839 ± 10)	(2482 ± 26)
NBS Concen. PPB	(2095 ± 16)	(2269 ± 10)	(2096 ± 13)	(2830 ± 9.0)	(2486 ± 27)

*Number of days after 1st RTI analysis date.
**NBS primary standard was analyzed as internal quality control on each day of RTI analysis.
***Fourth analysis was performed by automated cryogenic preconcentration with cryofocusing followed by GC/FID. The remaining analysis was performed by direct injection. Calibrations was performed using a NBS primary standard.

STABILITY STUDY FOR GROUP I COMPOUNDS
CYLINDER I-A27

ACTIVITY		COMPOUND				
		Carbon tetra-chloride	Chloroform	Perchloro-ethylene	Benzene	Vinyl Chloride
MANUFACTURER ANALYSIS						
Theoretical	PPB	(3000)	(6000)	(3000)	(6000)	(4000)
1st Analysis	Date	9/26/85	9/26/85	9/26/85	9/26/85	9/26/85
	PPB	(2953)	(5942)	(3143)	(6119)	(3947)
RTI ANALYSIS***						
1st RTI Analysis	Date	5/07/86	5/07/86	5/07/86	5/07/86	5/07/86
	PPB	(3421 ± 103)	(6435 ± 137)	(3239 ± 79)	(6820 ± 216)	(4049 ± 131)
2nd RTI Analysis	Day*	68	68	68	68	68
	PPB	(3231 ± 98)	(7191 ± 153)	(3345 ± 81)	(7177 ± 227)	(4158 ± 135)
3rd RTI Analysis	Day*	154	154	154	154	154
	PPB	(2998 ± 60)	(5880 ± 159)	(2951 ± 94)	(5989 ± 71)	(3917 ± 67)
4th RTI Analysis	Day*	498	498	498	498	498
	PPB	(2987 ± 59)	(6097 ± 160)	(3230 ± 95)	(6058 ± 72)	(4093 ± 68)
RTI QUALITY CONTROL**						
1st RTI Analysis	Date	5/07/86	5/07/86	5/07/86	5/07/86	5/07/86
	PPB	(2279 ± 68)	(2328 ± 49)	(2044 ± 49)	(2868 ± 92)	(2363 ± 76)
NBS Concen.	PPB	(2095 ± 16)	(2269 ± 10)	(2096 ± 13)	(2830 ± 9.0)	(2486 ± 27)
2nd RTI Analysis	Day	68	68	68	68	68
	PPB	(2226 ± 67)	(2284 ± 48)	(2194 ± 53)	(2909 ± 93)	(2484 ± 80)
NBS Concen.	PPB	(2095 ± 16)	(2269 ± 10)	(2096 ± 13)	(2830 ± 9.0)	(2486 ± 27)
3rd RTI Analysis	Day	153	153	153	153	153
	PPB	(2505 ± 50)	(2985 ± 81)	(2784 ± 89)	(2534 ± 33)	(2472 ± 42)
NBS Concen.	PPB	(2513 ± 19)	(2988 ± 13)	(2800 ± 17)	(2526 ± 8.0)	(2469 ± 27)
4th RTI Analysis	Day	507	507	507	507	507
	PPB	(2472 ± 26)	(2272 ± 11)	(2106 ± 14)	(2821 ± 8.0)	(2472 ± 28)
NBS Concen.	PPB	(2486 ± 27)	(2269 ± 10)	(2096 ± 13)	(2830 ± 9.0)	(2486 ± 27)

*Number of days after 1st RTI analysis date.

**NBS primary standard was analyzed as internal quality control on each day of RTI analysis.

***Fourth analysis was performed by automated cryogenic preconcentration with cryofocusing followed by GC/FID. The remaining analysis was performed by direct injection. Calibrations was performed using a NBS primary standard.

STABILITY STUDY FOR GROUP I COMPOUNDS
CYLINDER I-A28

ACTIVITY		COMPOUND				
		Carbon tetrachloride	Chloroform	Perchloroethylene	Benzene	Vinyl Chloride
MANUFACTURER ANALYSIS						
Theoretical	PPB	(4000)	(3000)	(6000)	(3000)	(3000)
1st Analysis	Date	9/26/85	9/26/85	9/26/85	9/26/85	9/26/85
	PPB	(4041)	(2915)	(6105)	(3013)	(2937)
RTI ANALYSIS* **						
1st RTI Analysis	Date	5/07/86	5/07/86	5/07/86	5/07/86	5/07/86
	PPB	(4305 ± 130)	(3076 ± 65)	(6937 ± 168)	(3100 ± 98)	(3412 ± 110)
2nd RTI Analysis	Day*	68	68	68	68	68
	PPB	(4474 ± 135)	(3336 ± 71)	(6959 ± 169)	(3448 ± 109)	(3342 ± 108)
3rd RTI Analysis	Day*	on audit	on audit	on audit	on audit	on audit
4th RTI Analysis	Day*	507	507	507	507	507
	PPB	(4432 ± 130)	(3287 ± 70)	(6940 ± 166)	(3396 ± 100)	(3385 ± 102)
RTI QUALITY CONTROL**						
1st RTI Analysis	Date	5/07/86	5/07/86	5/07/86	5/07/86	5/07/86
	PPB	(2279 ± 68)	(2328 ± 49)	(2044 ± 49)	(2868 ± 92)	(2363 ± 76)
NBS Concen.	PPB	(2095 ± 16)	(2269 ± 10)	(2096 ± 13)	(2830 ± 9)	(2486 ± 27)
2nd RTI Analysis	Day	68	68	68	68	68
	PPB	(2226 ± 67)	(2284 ± 48)	(2194 ± 53)	(2909 ± 93)	(2484 ± 80)
NBS Concen.	PPB	(2095 ± 16)	(2269 ± 10)	(2096 ± 13)	(2830 ± 9)	(2486 ± 27)
3rd RTI Analysis	Day	153	153	153	153	153
	PPB	(2505 ± 50)	(2985 ± 81)	(2784 ± 89)	(2534 ± 33)	(2472 ± 42)
NBS Concen.	PPB	(2513 ± 19)	(2988 ± 13)	(2800 ± 17)	(2526 ± 8.0)	(2469 ± 27)
4th RTI Analysis	Day	507	507	507	507	507
	PPB	(2472 ± 26)	(2272 ± 11)	(2106 ± 14)	(2821 ± 8.0)	(2472 ± 28)
NBS Concen.	PPB	(2486 ± 27)	(2269 ± 10)	(2096 ± 13)	(2830 ± 9.0)	(2486 ± 27)

*Number of days after 1st RTI analysis date.

**NBS primary standard was analyzed as internal quality control on each day of RTI analysis.

***Fourth analysis was performed by automated cryogenic preconcentration with cryofocusing followed by GC/FID. The remaining analysis was performed by direct injection. Calibrations was performed using a NBS primary standard.

STABILITY STUDY FOR GROUP I COMPOUNDS*
CYLINDER I-A30

ACTIVITY		COMPOUND				
		Carbon tetra-chloride	Chloroform	Perchloro-ethylene	Benzene	Vinyl Chloride
MANUFACTURER ANALYSIS						
Theoretical	PPB	(19.6)	(9.82)	(19.6)	(9.84)	(30.0)
1st Analysis	Date	3/13/87	4/30/87	4/30/87	4/30/87	4/30/87
	PPB	(18.8)	(9.61)	(18.1)	(9.91)	(26.9)
RTI ANALYSIS****						
1st Analysis	Date	7/06/87	7/06/87	7/06/87	7/06/87	7/06/87
	PPB	(20.8 ± 2.0)	(10.1 ± 0.3)	(20.7 ± 0.6)	(9.79 ± 0.4)	(28.0 ± 1.9)
2nd Analysis	Day**	50	50	50	50	50
	PPB	(20.7 ± 2.0)	(9.50 ± 0.3)	(20.7 ± 0.6)	(9.51 ± 0.4)	(27.0 ± 1.9)
RTI QUALITY CONTROL***						
1st Analysis	Date	7/06/87	7/06/87	7/06/87	7/06/87	7/06/87
	PPB	(20.6 ± 2.0)	(23.1 ± 0.7)	(30.0 ± 0.8)	(19.0 ± 0.8)	(24.5 ± 1.7)
NBS Concen.	PPB	(21.0 ± 1.0)	(23.0 ± 0.2)	(29.0 ± 1.0)	(18.0 ± 0.5)	(31.0 ± 1.0)
2nd Analysis	Day	50	50	50	50	50
	PPB	(17.7 ± 1.7)	(8.00 ± 0.2)	(20.7 ± 0.6)	(14.4 ± 0.6)	NA
NBS Concen.	PPB	(19.3 ± 1.0)	(9.60 ± 0.2)	(22.8 ± 0.2)	(16.8 ± 0.5)	(16.1 ± 1.0)

*An NBS primary standard was used for calibration.

**Number of days after 1st RTI analysis.

***A different NBS primary standard was analyzed as an internal quality control on each day of RTI analysis.

****All analyses were performed using automated cryogenic preconcentration with cryofocusing followed by GC/FID.

NA = Not Analyzed.

STABILITY STUDY FOR GROUP I COMPOUNDS*
CYLINDER I-A31

ACTIVITY	COMPOUND				
	Carbon tetra-chloride	Chloroform	Perchloro-ethylene	Benzene	Vinyl Chloride
MANUFACTURER ANALYSIS					
Theoretical PPB	(20.0)	(10.0)	(20.0)	(10.0)	(30.0)
1st Analysis Date	3/13/87	4/30/87	4/30/87	4/30/87	4/30/87
PPB	(18.8)	(9.83)	(19.0)	(10.1)	(27.3)
RTI ANALYSIS**					
1st Analysis Date	7/06/87	7/06/87	7/06/87	7/06/87	7/06/87
PPB	(21.1 ± 2.0)	(10.2 ± 0.3)	(21.0 ± 0.6)	(10.0 ± 0.4)	(27.1 ± 1.9)
2nd Analysis Day**	63	63	63	63	63
PPB	(21.1 ± 2.0)	(10.2 ± 0.3)	(20.6 ± 0.6)	(10.0 ± 0.5)	(27.0 ± 1.9)
RTI QUALITY CONTROL***					
1st Analysis Date	7/06/87	7/06/87	7/06/87	7/06/87	7/06/87
PPB	(20.6 ± 2.0)	(23.1 ± 0.2)	(30.0 ± 0.8)	(19.0 ± 0.8)	(24.5 ± 1.7)
NBS Concen. PPB	(21.0 ± 1.0)	(23.0 ± 0.2)	(29.0 ± 1.0)	(18.0 ± 0.5)	(31.0 ± 1.0)
2nd Analysis Day	63	63	63	63	63
PPB	(17.6 ± 1.7)	(9.50 ± 0.3)	(22.7 ± 0.6)	(16.6 ± 0.7)	(15.7 ± 1.1)
NBS Concen. PPB	(19.3 ± 1.0)	(9.60 ± 0.2)	(22.8 ± 0.2)	(16.8 ± 0.5)	(16.1 ± 1.0)

*An NBS primary standard was used for calibration.

**Number of days after 1st RTI analysis.

***A different NBS primary standard was analyzed as an internal quality control on each day of RTI analysis.

****All analyses were performed using automated cryogenic preconcentration with cryofocusing followed by GC/FID.

STABILITY STUDY FOR GROUP I COMPOUNDS*
CYLINDER I-A32

ACTIVITY		COMPOUND				
		Carbon tetra-chloride	Chloroform	Perchloro-ethylene	Benzene	Vinyl Chloride
MANUFACTURER ANALYSIS						
Theoretical	PPB	(20.1)	(10.1)	(20.1)	(10.1)	(30.0)
1st Analysis	Date	3/23/87	4/10/87	4/10/87	4/10/87	4/10/87
	PPB	(19.7)	(9.67)	(18.2)	(10.3)	(26.9)
RTI ANALYSIS****						
1st Analysis	Date	7/07/87	7/07/87	7/07/87	7/07/87	7/07/87
	PPB	(20.4 ± 1.9)	(10.1 ± 0.3)	(20.8 ± 0.6)	(9.72 ± 0.4)	(26.8 ± 1.8)
2nd Analysis	Day**	62	62	62	62	62
	PPB	(20.8 ± 2.0)	(10.3 ± 0.3)	(20.3 ± 0.6)	(10.4 ± 0.5)	(30.5 ± 2.1)
RTI QUALITY CONTROL***						
1st Analysis	Date	7/07/87	7/07/87	7/07/87	7/07/87	7/07/87
	PPB	(21.7 ± 2.0)	(24.8 ± 0.7)	(30.1 ± 0.8)	(19.1 ± 0.8)	(29.5 ± 2.0)
NBS Concen.	PPB	(21.0 ± 1.0)	(23.0 ± 0.2)	(29.0 ± 1.0)	(18.0 ± 0.5)	(31.0 ± 2.5)
2nd Analysis	Day	62	62	62	62	62
	PPB	(17.6 ± 1.7)	(9.50 ± 0.3)	(22.7 ± 0.6)	(16.6 ± 0.7)	(15.7 ± 1.1)
NBS Concen.	PPB	(19.3 ± 1.0)	(9.60 ± 0.2)	(22.8 ± 0.2)	(16.8 ± 0.5)	(16.1 ± 1.0)

*An NBS primary standard was used for calibration.

**Number of days after 1st RTI analysis.

***A different NBS primary standard was analyzed as an internal quality control on each day of RTI analysis.

****All analyses were performed using automated cryogenic preconcentration with cryofocusing followed by GC/FID.

STABILITY STUDY FOR GROUP I COMPOUNDS*
CYLINDER I-A33

ACTIVITY	COMPOUND				
	Carbon tetra-chloride	Chloroform	Perchloro-ethylene	Benzene	Vinyl Chloride
MANUFACTURER ANALYSIS					
Theoretical PPB	(20.1)	(10.1)	(20.2)	(10.1)	(30.0)
1st Analysis Date	3/12/87	4/08/87	4/08/87	4/08/87	4/08/87
PPB	(19.5)	(10.3)	(19.7)	(10.7)	(26.0)
RTI ANALYSIS****					
1st Analysis Date	7/07/87	7/07/87	7/07/87	7/07/87	7/07/87
PPB	(21.4 ± 2.0)	(10.6 ± 0.3)	(20.6 ± 0.6)	(10.3 ± 0.5)	(29.4 ± 2.0)
2nd Analysis Day**	on audit	on audit	on audit	on audit	on audit
PPB					
RTI QUALITY CONTROL***					
1st Analysis Date	7/07/87	7/07/87	7/07/87	7/07/87	7/07/87
PPB	(21.2 ± 2.0)	(24.8 ± 0.7)	(30.1 ± 0.8)	(19.1 ± 0.8)	(29.5 ± 2.0)
NBS Concen. PPB	(21.0 ± 1.0)	(23.0 ± 0.2)	(29.0 ± 1.0)	(18.0 ± 0.5)	(23.0 ± 1.0)
2nd Analysis Day	62	62	62	62	62
PPB	(17.6 ± 1.7)	(9.50 ± 0.3)	(22.7 ± 0.6)	(16.6 ± 0.7)	(15.1 ± 1.1)
NBS Concen. PPB	(19.3 ± 1.0)	(9.60 ± 0.2)	(22.8 ± 0.2)	(16.8 ± 0.5)	(16.1 ± 1.0)

*An NBS primary standard was used for calibration.

**Number of days after 1st RTI analysis.

***A different NBS primary standard was analyzed as an internal quality control on each day of RTI analysis.

****All analyses were performed using automated cryogenic preconcentration with cryofocusing followed by GC/FID.

STABILITY STUDY FOR GROUP I COMPOUNDS*
CYLINDER I-A34

ACTIVITY		COMPOUND				
		Carbon tetra-chloride	Chloroform	Perchloro-ethylene	Benzene	Vinyl Chloride
MANUFACTURER ANALYSIS						
Theoretical	PPB	(10.2)	(15.2)	(10.2)	(10.2)	(15.0)
1st Analysis	Date	3/12/87	5/01/87	5/01/87	5/01/87	5/01/87
	PPB	(9.48)	(15.2)	(9.67)	(10.2)	(14.0)
RTI ANALYSIS****						
1st Analysis	Date	7/07/87	7/07/87	7/07/87	7/07/87	7/07/87
	PPB	(10.8 ± 1.0)	(16.1 ± 0.5)	(11.1 ± 0.3)	(10.3 ± 0.5)	(15.2 ± 1.0)
2nd Analysis	Day**	62	62	62	62	62
	PPB	(9.50 ± 0.9)	(14.9 ± 0.4)	(11.5 ± 0.3)	(10.4 ± 0.5)	(14.6 ± 1.0)
RTI QUALITY CONTROL***						
1st Analysis	Date	7/07/87	7/07/87	7/07/87	7/07/87	7/07/87
	PPB	(21.2 ± 2.0)	(24.8 ± 0.7)	(30.1 ± 0.8)	(19.1 ± 0.8)	(29.5 ± 2.0)
NBS Concen.	PPB	(21.0 ± 1.0)	(23.0 ± 0.2)	(29.0 ± 1.0)	(18.0 ± 0.5)	(31.0 ± 1.0)
2nd Analysis	Day	62	62	62	62	62
	PPB	(17.6 ± 1.7)	(9.50 ± 0.3)	(22.7 ± 0.6)	(16.6 ± 0.7)	(15.7 ± 1.1)
NBS Concen.	PPB	(19.3 ± 1.0)	(9.60 ± 0.2)	(22.8 ± 0.2)	(16.8 ± 0.5)	(16.1 ± 1.0)

*An NBS primary standard was used for calibration.

**Number of days after 1st RTI analysis.

***A different NBS primary standard was analyzed as an internal quality control on each day of RTI analysis.

****All analyses were performed using automated cryogenic preconcentration with cryofocusing followed by GC/FID.

STABILITY STUDY FOR GROUP I COMPOUNDS*
CYLINDER I-A35

ACTIVITY	COMPOUND				
	Carbon tetra-chloride	Chloroform	Perchloro-ethylene	Benzene	Vinyl Chloride
MANUFACTURER ANALYSIS					
Theoretical PPB	(10.3)	(30.9)	(10.3)	(30.9)	(20.0)
1st Analysis Date	3/03/87	5/01/87	5/01/87	5/01/87	5/01/87
PPB	(9.85)	(30.3)	(9.85)	(31.1)	(18.2)
RTI ANALYSIS****					
1st Analysis Date	7/06/87	7/06/87	7/06/87	7/06/87	7/06/87
PPB	(9.69 ± 0.9)	(31.4 ± 0.9)	(10.9 ± 0.3)	(30.8 ± 1.4)	(21.5 ± 1.5)
2nd Analysis Day**	50	50	50	50	50
PPB	(9.66 ± 0.9)	(30.9 ± 0.9)	(10.9 ± 0.3)	(30.6 ± 1.3)	(21.2 ± 1.5)
RTI QUALITY CONTROL***					
1st Analysis Date	7/06/87	7/06/87	7/06/87	7/06/87	7/06/87
PPB	(20.6 ± 2.0)	(23.1 ± 0.7)	(30.0 ± 0.8)	(19.0 ± 0.8)	(24.5 ± 1.7)
NBS Concen. PPB	(21.0 ± 1.0)	(23.0 ± 0.2)	(29.0 ± 1.0)	(18.0 ± 0.5)	(31.0 ± 1.0)
2nd Analysis Day	50	50	50	50	50
PPB	(17.7 ± 1.7)	(8.00 ± 0.2)	(20.7 ± 0.6)	(14.4 ± 0.6)	NA
NBS Concen. PPB	(19.3 ± 1.0)	(9.60 ± 0.2)	(22.8 ± 0.2)	(16.8 ± 0.5)	(16.1 ± 1.0)

*An NBS primary standard was used for calibration.

**Number of days after 1st RTI analysis.

***A different NBS primary standard was analyzed as an internal quality control on each day of RTI analysis.

****All analyses were performed using autonated cryogenic preconcentration with cryofocusing followed by GC/FID.

NA = Not Analyzed

STABILITY STUDY FOR GROUP I COMPOUNDS*
CYLINDER I-A36

ACTIVITY	COMPOUND				
	Carbon tetra-chloride	Chloroform	Perchloro-ethylene	Benzene	Vinyl Chloride
MANUFACTURER ANALYSIS					
Theoretical PPB	(10.3)	(30.9)	(10.3)	(30.9)	(20.0)
1st Analysis Date	3/14/87	4/07/87	4/07/87	4/30/87	4/07/87
PPB	(10.3)	(23.9)	(8.65)	(30.7)	(18.2)
RTI ANALYSIS****					
1st Analysis Date	7/06/87	7/06/87	7/06/87	7/06/87	7/06/87
PPB	(10.8 ± 1.0)	(23.3 ± 0.7)	(7.58 ± 0.2)	(30.4 ± 1.3)	(22.2 ± 1.5)
2nd Analysis Day**	50	50	50	50	50
PPB	(11.1 ± 1.1)	(22.5 ± 0.6)	(7.60 ± 0.2)	(29.1 ± 1.3)	(21.5 ± 1.5)
RTI QUALITY CONTROL***					
1st Analysis Date	7/06/87	7/06/87	7/06/87	7/06/87	7/06/87
PPB	(20.6 ± 2.0)	(23.1 ± 0.7)	(30.0 ± 0.8)	(19.0 ± 0.8)	(24.5 ± 1.7)
NBS Concen. PPB	(21.0 ± 1.0)	(23.0 ± 0.2)	(29.0 ± 1.0)	(18.0 ± 0.5)	(31.0 ± 1.0)
2nd Analysis Day	50	50	50	50	50
PPB	(17.7 ± 1.7)	(8.00 ± 0.2)	(20.7 ± 0.6)	(14.4 ± 0.6)	NA
NBS Concen. PPB	(19.3 ± 1.0)	(9.60 ± 0.2)	(22.8 ± 0.2)	(16.8 ± 0.5)	(16.1 ± 1.0)

*An NBS primary standard was used for calibration.

**Number of days after 1st RTI analysis.

***A different NBS primary standard was analyzed as an internal quality control on each day of RTI analysis.

****All analyses were performed using automated cryogenic preconcentration with cryofocusing followed by GC/FID.

NA = Not Analyzed

STABILITY STUDY FOR GROUP I COMPOUNDS*
CYLINDER I-A37

ACTIVITY	COMPOUND				
	Carbon tetra-chloride	Chloroform	Perchloro-ethylene	Benzene	Vinyl Chloride
MANUFACTURER ANALYSIS					
Theoretical PPB	(10.0)	(30.1)	(10.0)	(30.1)	(20.0)
1st Analysis Date	3/04/87	4/07/87	4/07/87	4/30/87	4/07/87
PPB	(9.71)	(29.2)	(8.80)	(30.4)	(20.3)
RTI ANALYSIS****					
1st Analysis Date	7/08/87	7/08/87	7/08/87	7/08/87	7/08/87
PPB	(9.83 ± 0.9)	(30.8 ± 0.9)	(10.7 ± 0.3)	(30.9 ± 1.4)	(22.6 ± 1.6)
2nd Analysis Day**	48	48	48	48	48
PPB	(10.1 ± 1.0)	(29.6 ± 0.8)	(10.8 ± 0.3)	(30.1 ± 1.3)	(22.0 ± 1.5)
RTI QUALITY CONTROL***					
1st Analysis Date	7/08/87	7/08/87	7/08/87	7/08/87	7/08/87
PPB	(20.6 ± 2.0)	NA	NA	(18.7 ± 0.8)	NA
NBS Concen. PPB	(19.3 ± 1.0)	(9.60 ± 0.2)	(22.8 ± 0.2)	(16.8 ± 0.5)	(16.1 ± 1.0)
2nd Analysis Day	48	48	48	48	48
PPB	(17.7 ± 1.7)	(8.00 ± 0.2)	(20.7 ± 0.6)	(14.4 ± 0.6)	NA
NBS Concen. PPB	(19.3 ± 1.0)	(9.60 ± 0.2)	(22.8 ± 0.2)	(16.8 ± 0.5)	(16.1 ± 1.0)

*An NBS primary standard was used for calibration.

**Number of days after 1st RTI analysis.

***A different NBS primary standard was analyzed as an internal quality control on each day of RTI analysis.

****All analyses were performed using automated cryogenic preconcentration with cryofocusing followed by GC/FID.

NA = Not Analyzed

STABILITY STUDY FOR GROUP I COMPOUNDS*
CYLINDER I-A38

ACTIVITY	COMPOUND				
	Carbon tetra-chloride	Chloroform	Perchloro-ethylene	Benzene	Vinyl Chloride
MANUFACTURER ANALYSIS					
Theoretical PPB	(10.1)	(30.3)	(10.1)	(30.3)	(20.0)
1st Analysis Date	3/03/87	4/06/87	4/06/87	4/06/87	4/06/87
PPB	(9.55)	(31.2)	(10.3)	(29.1)	(18.8)
RTI ANALYSIS****					
1st Analysis Date	7/08/87	7/08/87	7/08/87	7/08/87	7/08/87
PPB	(9.74 ± 0.9)	(30.9 ± 0.9)	(11.1 ± 0.3)	(30.5 ± 1.3)	(20.2 ± 1.4)
2nd Analysis Day**	61	61	61	61	61
PPB	(10.5 ± 1.0)	(30.7 ± 0.9)	(11.3 ± 0.3)	(30.4 ± 1.3)	(19.8 ± 1.4)
RTI QUALITY CONTROL***					
1st Analysis Date	7/08/87	7/08/87	7/08/87	7/08/87	7/08/87
PPB	(21.2 ± 2.0)	NA	NA	(19.1 ± 0.8)	NA
NBS Concen. PPB	(19.3 ± 1.0)	(9.60 ± 0.2)	(22.8 ± 0.2)	(16.8 ± 0.5)	(16.1 ± 1.0)
2nd Analysis Day	61	61	61	61	61
PPB	(17.6 ± 1.7)	(9.50 ± 0.3)	(22.7 ± 0.6)	(16.6 ± 0.7)	(15.7 ± 1.1)
NBS Concen. PPB	(19.3 ± 1.0)	(9.60 ± 0.2)	(22.8 ± 0.2)	(16.8 ± 0.5)	(16.1 ± 1.0)

*An NBS primary standard was used for calibration.

**Number of days after 1st RTI analysis.

***A different NBS primary standard was analyzed as an internal quality control on each day of RTI analysis.

****All analyses were performed using automated cryogenic preconcentration with cryofocusing followed by GC/FID.

NA = Not Analyzed

STABILITY STUDY FOR GROUP II COMPOUNDS*
CYLINDER II-A1

ACTIVITY		COMPOUND								
		Acetonitrile	Methyl Ethyl Ketone	Trichloro-ethylene	1,2-Dichloro-ethane	Trichloro-fluoro-methane (F-11)	Bromomethane	Dichlorodi-fluorometh-ane (F-12)	1,2-Dibro-moethane	1,1,1-Trichloro-ethane
MANUFACTURER ANALYSIS										
Theoretical	PPB	(161)	(164)	(164)	(161)	(149)	(150)	(151)	(162)	NC
1st Analysis	Date	3/05/84	3/05/84	3/05/84	3/05/84	3/05/84	3/07/84	3/07/84	3/05/84	
	PPB	(144)	(167)	(152)	(167)	(152)	(161)	(153)	(201)	NC
2nd Analysis	Date	4/03/84	4/03/84	4/03/84	4/03/84	4/03/84	4/04/84	4/04/84	4/03/84	
	PPB	(133)	(168)	(148)	(141)	(143)	(170)	(148)	(192)	NC
RTI ANALYSIS*****										
1st Analysis	Date	5/28/84	5/28/84	5/14/84	5/14/84	5/14/84**	5/14/84	5/08/84**	5/08/84**	
	PPB	(145 ± 10.2)†	(194 ± 10.7)†	(147 ± 7.1)	(156 ± 8.0)	(130 ± 4.4)†	(172 ± 6.7)	(143 ± 5.9)†	(157 ± 6.4)†	NC
2nd Analysis	Day***	82	82	98	99	98	98	104	104	
	PPB	(130 ± 9.1)†	(187 ± 10.3)†	(145 ± 7.0)	(150 ± 7.7)	(153 ± 5.2)	(170 ± 6.6)	(168 ± 6.9)	(183 ± 7.5)	NC
3rd Analysis	Day***	302	302	287	302	287	287	293	293	
	PPB	(110 ± 7.7)	(144 ± 7.9)	(140 ± 6.7)	(146 ± 7.4)	(160 ± 5.4)	(168 ± 6.6)	(173 ± 7.1)	(177 ± 7.3)	NC
4th Analysis	Day***	449	449	452	452	452	452	458	458	
	PPB	(112 ± 7.8)	(140 ± 7.7)	(141 ± 6.8)	(135 ± 6.9)	(161 ± 5.5)	(168 ± 6.6)	(164 ± 6.7)	(174 ± 7.1)	NC
5th Analysis	Day***	750	750	775	771	775	775	775	771	765
	PPB	on audit	on audit	on audit	on audit	on audit	on audit	on audit	on audit	on audit
6th Analysis	Day***	901	901	901	901	901	901	901	901	901
	PPB	(126 ± 16.9)	(154 ± 7.4)	(142 ± 4.4)	(142 ± 4.4)	(156 ± 13.3)	(176 ± 7.5)	NA	(184 ± 7.4)	NC

(Continued)

*Calibration was performed using permeation devices unless otherwise specified. An NBS primary standard was used for calibration for 6th analysis.
**Calibration was performed using stainless steel sphere dilution method.
***Number of days after 1st RTI analysis date.
****A different NBS primary standard was analyzed as internal Quality Control on each day of RTI analysis. No Quality Control with NBS primary standards was performed during RTI 1st and 2nd analysis.
*****Sixth RTI analysis was performed using automated cryogenic preconcentration with cryofocusing followed by GC/FID.

† = Questionable value.
NC = This compound was not included in this cylinder.
NA = Not Analyzed.

STABILITY STUDY FOR GROUP II COMPOUNDS* (Continued)
CYLINDER II-A1

ACTIVITY		COMPOUND								
		Acetonitrile	Methyl Ethyl Ketone	Trichloro-ethylene	1,2-Dichloro-ethane	Trichloro-fluoro-methane (F-11)	Bromomethane	Dichlorodi-fluoromeths-ane (F-12)	1,2-Dibro-moethane	1,1,1-Trichloro-ethane
RTI QUALITY CONTROL****										
3rd Analysis	Day	302	302	287	302	287	287	293	293	302
	PPB	(78.5 ± 5.5)	(132 ± 7.3)	(118 ± 5.7)	(131 ± 6.7)	(153 ± 5.2)	(190 ± 7.4)	(112 ± 4.6)	(149 ± 6.1)	(149 ± 7.5)
NBS Concen.	PPB	(82.7 ± 9.6)	(137 ± 6.0)	(118 ± 1.0)	(123 ± 2.0)	(151 ± 5.0)	(193 ± 3.0)	(116 ± 4.0)	(150 ± 2.0)	(147 ± 3.0)
4th Analysis	Day	449	449	452	452	452	452	458	458	452
	PPB	(85.2 ± 6.0)	(130 ± 7.2)	(120 ± 5.8)	(120 ± 6.1)	(154 ± 5.2)	(190 ± 7.4)	(119 ± 4.9)	(132 ± 5.4)	(139 ± 7.0)
NBS Concen.	PPB	(82.7 ± 9.6)	(137 ± 6.0)	(118 ± 1.0)	(123 ± 2.0)	(151 ± 5.0)	(193 ± 3.0)	(116 ± 4.0)	(150 ± 2.0)	(147 ± 3.0)
5th Analysis	Day	750	750	775	771	775	775	775	771	765
	PPB	(13.0 ± 0.9)	(16.0 ± 0.9)	(11.5 ± 0.5)	(9.5 ± 0.4)	(10.7 ± 0.4)	(20.4 ± 0.8)	(10.6 ± 0.4)	(9.70 ± 0.4)	(11.8 ± 0.6)
NBS Concen.	PPB	(12.1 ± 1.9)	(15.8 ± 2.0)	(11.6 ± 0.3)	(9.14 ± 0.59)	(11.3 ± 0.6)	(23.0 ± 0.6)	(9.41 ± 0.37)	(9.61 ± 0.29)	(11.9 ± 0.3)
6th Analysis	Day	901	901	901	901	901	901	901	901	901
	PPB	(12.8 ± 1.7)	(17.0 ± 0.8)	(11.5 ± 0.4)	(8.90 ± 0.3)	(10.8 ± 1.0)	(17.5 ± 0.7)	NA	(9.80 ± 0.4)	(11.7 ± 0.4)
NBS Concen.	PPB	(12.1 ± 1.9)	(15.8 ± 2.0)	(11.6 ± 0.3)	(9.14 ± 0.6)	(11.3 ± 0.6)	(23.0 ± 0.6)	(9.41 ± 0.6)	(9.61 ± 0.3)	(11.9 ± 0.3)

*Calibration was performed using permeation devices unless otherwise specified. An NBS primary standard was used for calibration for 6th analysis.
**Calibration was performed using stainless steel sphere dilution method.
***Number of days after 1st RTI analysis date.
****A different NBS primary standard was analyzed as internal Quality Control on each day of RTI analysis. No Quality Control with NBS primary standards was performed during RTI 1st and 2nd analysis.
*****Sixth RTI analysis was performed using automated cryogenic preconcentration with cryofocusing followed by GC/FID.

† = Questionable value.
NC = This compound was not included in this cylinder.
NA = Not Analyzed.

STABILITY STUDY FOR GROUP II COMPOUNDS*
CYLINDER II-A2

ACTIVITY		COMPOUND								
		Acetonitrile	Methyl Ethyl Ketone	Trichloro-ethylene	1,2-Dichloro-ethane	Trichloro-fluoro-methane (F-11)	Bromomethane	Dichlorodi-fluorometh-ane (F-12)	1,2-Dibro-moethane	1,1,1-Trichloro-ethane
MANUFACTURER ANALYSIS										
Theoretical	PPB	(167)	(169)	(169)	(167)	(149)	(150)	(151)	(168)	NC
1st Analysis	Date	3/16/84	3/16/84	3/16/84	3/16/84	3/16/84	3/20/84	3/20/84	3/16/84	
	PPB	(110)	(140)	(135)	(108)	(147)	(163)	(152)	(175)	NC
2nd Analysis	Date	4/03/84	4/03/84	4/03/84	4/03/84	4/03/84	4/05/84	4/05/84	4/03/84	
	PPB	(107)	(146)	(144)	(139)	(141)	(165)	(147)	(184)	NC
RTI ANALYSIS										
1st Analysis	Date	5/28/84	5/28/84	5/14/84	5/14/84	5/14/84**	5/14/84	5/08/84**	5/08/84**	
	PPB	(124 ± 8.7)	(161 ± 8.9)	(146 ± 7.0)	(158 ± 8.1)	(129 ± 4.4)†	(169 ± 6.6)	(141 ± 5.8)†	(163 ± 6.7)†	NC
2nd Analysis	Day***	82	82	98	98	98	98	104	104	
	PPB	(146 ± 10.2)†	(178 ± 9.8)†	(143 ± 6.9)	(150 ± 7.7)	(152 ± 5.2)	(167 ± 6.5)	(166 ± 6.8)	(189 ± 7.7)	NC
3rd Analysis	Day***	302	302	287	302	287	287	293	293	
	PPB	(107 ± 7.5)	(130 ± 7.2)	(141 ± 6.8)	(136 ± 6.9)	(158 ± 5.4)	(165 ± 6.4)	(167 ± 6.8)	(186 ± 7.6)	NC
4th Analysis	Day***	449	449	452	452	452	452	458	458	
	PPB	(109 ± 7.6)	(128 ± 7.0)	(139 ± 6.7)	(139 ± 7.1)	(158 ± 5.4)	(164 ± 6.4)	(148 ± 6.1)	(164 ± 6.7)	NC
5th Analysis	Day***	749	749	777	777	777	777	783	783	
	PPB	(119 ± 8.3)	(159 ± 8.4)	(141 ± 6.9)	(156 ± 8.1)	(163 ± 5.1)	(178 ± 7.1)	(163 ± 6.3)	(197 ± 8.1)	NC
6th Analysis	Day***	on audit	on audit	on audit	on audit	on audit	on audit	on audit	on audit	
	PPB									NC

(Continued)

*Calibration was performed using permeation devices unless otherwise specified.
**Calibration was performed using stainless steel sphere dilution method.
***Number of days after 1st RTI analysis date.
****NBS primary standard was analyzed as internal Quality Control on each day of RTI analysis unless otherwise indicated. No Quality Control with NBS primary standards was performed during RTI 1st and 2nd analysis.

† = Questionable value.
NC = This compound was not included in this cylinder.

STABILITY STUDY FOR GROUP II COMPOUNDS* (Continued)
CYLINDER II-A2

ACTIVITY		COMPOUND								
		Acetonitrile	Methyl Ethyl Ketone	Trichloro-ethylene	1,2-Dichloro-ethane	Trichloro-fluoro-methane (F-11)	Bromomethane	Dichlorodi-fluorometh-ane (F-12)	1,2-Dibro-moethane	1,1,1-Trichloro-ethane
RTI QUALITY CONTROL****										
3rd Analysis	Day	302	302	287	302	287	287	293	293	302
	PPB	(78.5 ± 5.5)	(132 ± 7.3)	(118 ± 5.7)	(131 ± 6.7)	(153 ± 5.2)	(190 ± 7.4)	(112 ± 4.6)	(149 ± 6.1)	(149 ± 7.5)
NBS Concen.	PPB	(82.7 ± 9.6)	(137 ± 6.0)	(118 ± 1.0)	(123 ± 2.0)	(151 ± 5.0)	(193 ± 3.0)	(116 ± 4.0)	(150 ± 2.0)	(147 ± 3.0)
4th Analysis	Day	449	449	452	452	452	452	458	458	452
	PPB	(85.2 ± 6.0)	(135 ± 7.4)	(120 ± 5.8)	(120 ± 6.1)	(154 ± 5.2)	(190 ± 7.4)	(119 ± 4.9)	(132 ± 5.4)	(139 ± 7.0)
NBS Concen.	PPB	(82.7 ± 9.6)	(137 ± 6.0)	(118 ± 1.0)	(123 ± 2.0)	(151 ± 5.0)	(193 ± 3.0)	(116 ± 4.0)	(150 ± 2.0)	(147 ± 3.0)
5th Analysis	Day	749	749	777	777	777	777	783	783	783
	PPB	(13.6 ± 0.9)	(16.1 ± 0.9)	(119 ± 6.0)	(126 ± 7.0)	(157 ± 5.0)	(180 ± 7.0)	(116 ± 4.0)	(158 ± 7.0)	(154 ± 8.0)
NBS Concen.	PPB	(12.1 ± 1.9)	(15.8 ± 2.0)	(118 ± 1.0)	(123 ± 2.0)	(151 ± 5.0)	(193 ± 3.0)	(116 ± 4.0)	(150 ± 2.0)	(147 ± 3.0)
6th Analysis	Day	901	901	901	901	901	901	901	901	901
	PPB	(12.8 ± 1.7)	(17.0 ± 0.8)	(11.5 ± 0.4)	(8.90 ± 0.3)	(10.8 ± 1.0)	(17.5 ± 0.7)	NA	(9.80 ± 0.4)	(11.7 ± 0.4)
NBS Concen.	PPB	(12.1 ± 1.9)	(15.8 ± 2.0)	(11.6 ± 0.3)	(9.14 ± 0.6)	(11.3 ± 0.6)	(23.0 ± 0.6)	(9.41 ± 0.6)	(9.61 ± 0.3)	(11.9 ± 0.3)

*Calibration was performed using permeation devices unless otherwise specified.
**Calibration was performed using stainless steel sphere dilution method.
***Number of days after 1st RTI analysis date.
****NBS primary standard was analyzed as internal Quality Control on each day of RTI analysis unless otherwise indicated. No Quality Control with NBS primary standards was performed during RTI 1st and 2nd analysis.

† = Questionable value.
NC = This compound was not included in this cylinder.
NA = Not Analyzed.

STABILITY STUDY FOR GROUP II COMPOUNDS*
CYLINDER II-A3

ACTIVITY		COMPOUND								
		Acetonitrile	Methyl Ethyl Ketone	Trichloro-ethylene	1,2-Dichloro-ethane	Trichloro-fluoro-methane (F-11)	Bromomethane	Dichlorodi-fluorometh-ane (F-12)	1,2-Dibro-moethane	1,1,1-Trichloro-ethane
MANUFACTURER ANALYSIS										
Theoretical	PPB	(166)	(168)	(168)	(166)	(149)	(150)	(151)	(167)	NC
1st Analysis	Date	3/16/84	3/16/84	3/16/84	3/16/84	3/16/84	3/07/84	3/07/84	3/16/84	
	PPB	(120)	(133)	(142)	(111)	(154)	(169)	(161)	(205)	NC
2nd Analysis	Date	4/03/84	4/03/84	4/03/84	4/03/84	4/03/84	4/05/84	4/05/84	4/03/84	
	PPB	(104)	(138)	(151)	(143)	(144)	(172)	(153)	(208)	NC
RTI ANALYSIS										
1st Analysis	Date	5/28/84	5/28/84	5/14/84	5/14/84	5/14/84**	5/14/84	5/08/84**	5/08/84**	
	PPB	(107 ± 7.5)	(151 ± 8.3)	(147 ± 7.1)	(163 ± 8.3)	(131 ± 4.5)†	(173 ± 6.7)	(144 ± 5.9)†	(165 ± 6.8)†	NC
2nd Analysis	Day***	82	82	98	98	98	98	104	104	
	PPB	(146 ± 10.2)	(170 ± 9.4)	(145 ± 7.0)	(157 ± 8.0)	(155 ± 5.3)	(170 ± 6.6)	(170 ± 7.0)	(196 ± 8.0)	NC
3rd Analysis	Day***	302	302	287	302	287	287	293	293	
	PPB	(106 ± 7.4)	(123 ± 6.8)†	(142 ± 6.8)	(139 ± 7.1)	(161 ± 5.5)	(168 ± 6.6)	(170 ± 7.0)	(192 ± 7.9)	NC
4th Analysis	Day***									
	PPB	on audit	on audit	on audit	on audit	on audit	on audit	on audit	on audit	NC
5th Analysis	Day***	749	749	777	777	777	777	783	783	
	PPB	(140 ± 9.9)	(159 ± 8.4)	(143 ± 7.0)	(161 ± 8.3)	(168 ± 5.3)	(178 ± 7.1)	(168 ± 6.5)	(206 ± 8.5)	NC
6th Analysis	Day***	on audit	on audit	on audit	on audit	on audit	on audit	on audit	on audit	NC
	PPB									

(Continued)

*Calibration was performed using permeation devices unless otherwise specified.
**Calibration was performed using stainless steel sphere dilution method.
***Number of days after 1st RTI analysis date.
****NBS primary standard was analyzed as internal Quality Control on each day of RTI analysis unless otherwise indicated. No Quality Control with NBS primary standards was performed during RTI 1st and 2nd analysis.

† = Questionable value.
NC = This compound was not included in this cylinder.

STABILITY STUDY FOR GROUP II COMPOUNDS* (Continued)
CYLINDER II-A3

ACTIVITY	COMPOUND								
	Acetonitrile	Methyl Ethyl Ketone	Trichloro-ethylene	1,2-Dichloro-ethane	Trichloro-fluoro-methane (F-11)	Bromomethane	Dichlorodi-fluorometh-ane (F-12)	1,2-Dibro-moethane	1,1,1-Trichloro-ethane
RTI QUALITY CONTROL****									
3rd Analysis Day	302	302	287	302	287	287	293	293	0
PPB	(78.5 ± 5.5)	(132 ± 7.3)	(118 ± 5.7)	(131 ± 6.7)	(153 ± 5.2)	(190 ± 7.4)	(112 ± 4.6)	(149 ± 6.1)	(149 ± 7.5)
NBS Concen. PPB	(82.7 ± 9.6)	(137 ± 6)	(118 ± 1)	(123 ± 2)	(151 ± 5)	(193 ± 3)	(116 ± 4)	(150 ± 2)	(147 ± 3)
4th Analysis Day	449	449	452	452	452	452	458	458	452
PPB	(85.2 ± 6.0)	(135 ± 7.4)	(120 ± 5.8)	(120 ± 6.1)	(154 ± 5.2)	(190 ± 7.4)	(119 ± 4.9)	(132 ± 5.4)	(139 ± 7.0)
NBS Concen. PPB	(82.7 ± 9.6)	(137 ± 6)	(118 ± 1)	(123 ± 2)	(151 ± 5)	(193 ± 3)	(116 ± 4)	(150 ± 2)	(147 ± 3)
5th Analysis Day	749	749	777	777	777	777	783	783	783
PPB	(13.6 ± 0.9)	(16.1 ± 0.8)	(119 ± 6)	(126 ± 7)	(157 ± 5)	(180 ± 7)	(116 ± 4)	(158 ± 7)	(154 ± 8)
NBS Concen. PPB	(12.1 ± 1.9)	(15.8 ± 2.0)	(118 ± 1)	(123 ± 2)	(151 ± 5)	(193 ± 3)	(116 ± 4)	(150 ± 2)	(147 ± 3)
6th Analysis Day	901	901	901	901	901	901	901	901	901
PPB	(12.8 ± 1.7)	(17.0 ± 0.8)	(11.5 ± 0.4)	(8.90 ± 0.3)	(10.8 ± 1.0)	(17.5 ± 0.7)	NA	(9.80 ± 0.4)	(11.7 ± 0.4)
NBS Concen. PPB	(12.1 ± 1.9)	(15.8 ± 2.0)	(11.6 ± 0.3)	(9.14 ± 0.6)	(11.3 ± 0.6)	(23.0 ± 0.6)	(9.41 ± 0.6)	(9.61 ± 0.3)	(11.9 ± 0.3)

*Calibration was performed using permeation devices unless otherwise specified.
**Calibration was performed using stainless steel sphere dilution method.
***Number of days after 1st RTI analysis date.
****NBS primary standard was analyzed as internal Quality Control on each day of RTI analysis unless otherwise indicated. No Quality Control with NBS primary standards was performed during RTI 1st and 2nd analysis.

† = Questionable value.
NC = This compound was not included in this cylinder.
NA = Not Analyzed.

STABILITY STUDY FOR GROUP II COMPOUNDS*
CYLINDER II-A4

ACTIVITY		COMPOUND								
		Acetonitrile	Methyl Ethyl Ketone	Trichloro-ethylene	1,2-Dichloro-ethane	Trichloro-fluoro-methane (F-11)	Bromomethane	Dichlorodi-fluorometh-ane (F-12)	1,2-Dibro-moethane	1,1,1-Trichloro-ethane
MANUFACTURER ANALYSIS										
Theoretical	PPB	(15.4)	(15.8)	(15.7)	(15.5)	(14.9)	(15.0)	(15.1)	(15.7)	(15.3)
1st Analysis	Date	3/15/84	3/15/84	3/15/84	3/15/84	3/21/84	3/21/84	3/21/84	3/15/84	3/15/84
	PPB	(14.0)	(16.3)	(16.3)	(10.7)	(11.5)	(11.9)	(15.0)	(17.8)	(11.6)
2nd Analysis	Date	4/02/84	4/02/84	4/02/84	4/02/84	4/05/84	4/05/84	4/05/84	4/02/84	4/02/84
	PPB	(14.0)	(16.2)	(17.5)	(11.5)	(13.3)	(12.5)	(14.6)	(16.1)	(15.3)
RTI ANALYSIS										
1st Analysis	Date	5/24/84	5/24/84	5/14/84	5/14/84	5/14/84	5/14/84	5/14/84**	5/14/84**	5/20/84
	PPB	(16.2 ± 1.1)	(20.2 ± 1.1)	(14.6 ± 0.7)	(15.3 ± 0.8)	(13.1 ± 0.4)**	(15.2 ± 0.6)	(13.7 ± 0.6)†	(11.3 ± 0.5)†	(16.9 ± 0.8)†
2nd Analysis	Day***	87	87	98	93	98	98	98	98	93
	PPB	(17.6 ± 1.2)	(19.4 ± 1.1)	(14.7 ± 0.7)	(14.4 ± 0.7)	(15.1 ± 0.5)	(15.4 ± 0.6)	(16.3 ± 0.7)	(16.5 ± 0.7)	(14.5 ± 0.7)
3rd Analysis	Day***									
	PPB	on audit	on audit	on audit	on audit	on audit	on audit	on audit	on audit	on audit
4th Analysis	Day***	454	454	449	443	449	449	449	449	443
	PPB	(15.9 ± 1.1)	(19.0 ± 1.0)	(14.2 ± 0.7)	(15.5 ± 0.8)	(16.0 ± 0.5)	(15.0 ± 0.6)	(15.6 ± 0.6)	(14.5 ± 0.6)	(13.3 ± 0.7)
5th Analysis	Day***	749	749	772	772	772	772	772	772	766
	PPB	(14.9 ± 1.1)	(18.1 ± 1.0)	(13.2 ± 0.7)	(16.7 ± 0.9)	(15.9 ± 0.5)	(12.6 ± 0.5)	(15.5 ± 0.6)	(16.2 ± 0.7)	(16.3 ± 0.9)
6th Analysis	Day***	on audit	on audit	on audit	on audit	on audit	on audit	on audit	on audit	NC
	PPB									

*Calibration was performed using permeation devices unless otherwise specified.
**Calibration was performed using stainless steel sphere dilution method.
***Number of days after 1st RTI analysis date.
****NBS primary standard was analyzed as internal Quality Control on each day of RTI analysis unless otherwise indicated. No Quality Control with NBS primary standards was performed during RTI 1st and 2nd analysis.

† = Questionable value.
NC = This compound was not included in this cylinder.

STABILITY STUDY FOR GROUP II COMPOUNDS* (Continued)
CYLINDER II-A4

ACTIVITY		COMPOUND								
		Acetonitrile	Methyl Ethyl Ketone	Trichloro-ethylene	1,2-Dichloro-ethane	Trichloro-fluoro-methane (F-11)	Bromomethane	Dichlorodi-fluoromeths-ane (F-12)	1,2-Dibro-moethane	1,1,1-Trichloro-ethane
RTI QUALITY CONTROL****										
3rd Analysis	Day	309	309	297	310	297	297	297	297	310
	PPB	(14.1 ± 1.0)	(16.9 ± 0.9)	(10.9 ± 0.5)	(8.8 ± 0.4)	(10.7 ± 0.4)	(19.4 ± 0.8)	(8.2 ± 0.3)	(9.5 ± 0.4)	(11.4 ± 0.6)
NBS Concen.	PPB	(12.1 ± 1.9)	(15.8 ± 2.0)	(11.6 ± 0.3)	(9.14 ± 0.59)	(11.3 ± 0.6)	(23.0 ± 0.6)	(9.41 ± 0.37)	(9.61 ± 0.29)	(11.9 ± 0.3)
4th Analysis	Day	454	454	449	443	449	449	449	449	443
	PPB	(14.0 ± 1.0)	(16.9 ± 0.9)	(11.6 ± 0.6)	(9.1 ± 0.5)	(11.0 ± 0.4)	(19.3 ± 0.8)	(8.4 ± 0.3)	(8.8 ± 0.4)	(11.3 ± 0.6)
NBS Concen.	PPB	(12.1 ± 1.9)	(15.8 ± 2.0)	(11.6 ± 0.3)	(9.14 ± 0.59)	(11.3 ± 0.6)	(23.0 ± 0.6)	(9.41 ± 0.37)	(9.61 ± 0.29)	(11.9 ± 0.3)
5th Analysis	Day	749	749	772	772	772	772	772	772	766
	PPB	(13.0 ± 0.9)	(16.1 ± 0.8)	(10.9 ± 0.5)	(9.5 ± 0.5)	(10.6 ± 0.3)	(19.9 ± 0.8)	(10.8 ± 0.4)	(9.7 ± 0.4)	(11.8 ± 0.6)
NBS Concen.	PPB	(12.1 ± 1.9)	(15.8 ± 2.0)	(11.6 ± 0.3)	(9.14 ± 0.59)	(11.3 ± 0.6)	(23.0 ± 0.6)	(9.41 ± 0.37)	(9.61 ± 0.29)	(11.9 ± 0.3)
6th Analysis	Day	901	901	901	901	901	901	901	901	901
	PPB	(12.8 ± 1.7)	(17.0 ± 0.8)	(11.5 ± 0.4)	(8.90 ± 0.3)	(10.8 ± 1.0)	(17.5 ± 0.7)	NA	(9.80 ± 0.4)	(11.7 ± 0.4)
NBS Concen.	PPB	(12.1 ± 1.9)	(15.8 ± 2.0)	(11.6 ± 0.3)	(9.14 ± 0.6)	(11.3 ± 0.6)	(23.0 ± 0.6)	(9.41 ± 0.6)	(9.61 ± 0.3)	(11.9 ± 0.3)

*Calibration was performed using permeation devices unless otherwise specified.
**Calibration was performed using stainless steel sphere dilution method.
***Number of days after 1st RTI analysis date.
****NBS primary standard was analyzed as internal Quality Control on each day of RTI analysis unless otherwise indicated. No Quality Control with NBS primary standards was performed during RTI 1st and 2nd analysis.

† = Questionable value.
NC = This compound was not included in this cylinder.
NA = Not Analyzed.

STABILITY STUDY FOR GROUP II COMPOUNDS*
CYLINDER II-A5

ACTIVITY		COMPOUND								
		Acetonitrile	Methyl Ethyl Ketone	Trichloro-ethylene	1,2-Dichloro-ethane	Trichloro-fluoro-methane (F-11)	Bromomethane	Dichlorodi-fluorometh-ane (F-12)	1,2-Dibro-moethane	1,1,1-Trichloro-ethane
MANUFACTURER ANALYSIS										
Theoretical	PPB	(15.5)	(16.0)	(15.9)	(15.7)	(15.0)	(15.0)	(15.0)	(15.9)	(15.5)
1st Analysis	Date	3/14/84	3/14/84	3/14/84	3/14/84	3/21/84	3/21/84	3/21/84	3/14/84	3/14/84
	PPB	(8.90)	(7.80)	(16.9)	(11.2)	(9.60)	(11.3)	(16.0)	(18.2)	(11.3)
2nd Analysis	Date	4/02/84	4/02/84	4/02/84	4/02/84	4/05/84	4/05/84	4/05/84	4/02/84	4/02/84
	PPB	(8.80)	(7.40)	(18.2)	(11.8)	(15.6)	(12.7)	(15.1)	(16.0)	(15.2)
RTI ANALYSIS****										
1st Analysis	Date	5/24/84	5/24/84	5/14/84	5/20/84	5/14/84**	5/14/84	5/14/84**	5/20/84**	5/20/84
	PPB	(13.4 ± 0.9)†	(10.6 ± 0.6)†	(15.1 ± 0.7)	(14.6 ± 0.7)	(13.5 ± 0.5)†	(15.5 ± 0.6)	(13.8 ± 0.6)†	(16.2 ± 0.7)	(16.8 ± 0.8)†
2nd Analysis	Day***	87	87	98	93	98	98	98	98	98
	PPB	(13.8 ± 1.0)†	(8.50 ± 0.5)	(15.1 ± 0.7)	(14.7 ± 0.7)	(15.5 ± 0.5)	(15.4 ± 0.6)	(16.7 ± 0.7)	(16.8 ± 0.7)	(14.8 ± 0.7)
3rd Analysis	Day***	309	309		310					310
	PPB	(10.3 ± 0.7)	(8.00 ± 0.4)	on audit	(14.2 ± 0.7)	on audit	on audit	on audit	on audit	(14.1 ± 0.7)
4th Analysis	Day***	454	454	449	443	449	449	449	449	443
	PPB	(10.8 ± 0.8)	(9.30 ± 0.6)	(15.3 ± 0.7)	(15.4 ± 0.8)	(16.3 ± 0.6)	(14.6 ± 0.6)	(16.3 ± 0.7)	(14.1 ± 0.6)	(13.9 ± 0.7)
5th Analysis	Day***	749	749	773	767	773	773	773	773	767
	PPB	(13.1 ± 0.9)	(12.7 ± 0.7)	(15.1 ± 0.7)	(14.2 ± 0.7)	(16.3 ± 0.5)	(17.4 ± 0.7)	(16.4 ± 0.6)	(15.0 ± 0.6)	(15.7 ± 0.8)
6th Analysis	Day***	on audit	on audit	on audit	on audit	on audit	on audit	on audit	on audit	NC
	PPB									

(Continued)

*Calibration was performed using permeation devices unless otherwise specified.
**Calibration was performed using stainless steel sphere dilution method.
***Number of days after 1st RTI analysis date.
****NBS primary standard was analyzed as internal Quality Control on each day of RTI analysis unless otherwise indicated. No Quality Control with NBS primary standards was performed during RTI 1st and 2nd analysis.

† = Questionable value.
NC = This compound was not included in this cylinder.

STABILITY STUDY FOR GROUP II COMPOUNDS* (Continued)
CYLINDER II-A5

ACTIVITY		COMPOUND								
		Acetonitrile	Methyl Ethyl Ketone	Trichloro-ethylene	1,2-Dichloro-ethane	Trichloro-fluoro-methane (F-11)	Bromomethane	Dichlorodi-fluorometh-ane (F-12)	1,2-Dibro-moethane	1,1,1-Trichloro-ethane
RTI QUALITY CONTROL****										
3rd Analysis	Day	309	309	297	310	297	297	297	297	310
	PPB	(14.1 ± 1.0)	(16.9 ± 0.9)	(10.9 ± 0.5)	(8.80 ± 0.4)	(10.7 ± 0.4)	(19.4 ± 0.8)	(8.20 ± 0.3)	(9.50 ± 0.4)	(11.4 ± 0.6)
NBS Concen.	PPB	(12.1 ± 1.9)	(15.8 ± 2.0)	(11.6 ± 0.3)	(9.14 ± 0.6)	(11.3 ± 0.6)	(23.0 ± 0.6)	(9.41 ± 0.4)	(9.61 ± 0.3)	(11.9 ± 0.3)
4th Analysis	Day	454	454	449	443	449	449	449	449	443
	PPB	(14.0 ± 1.0)	(16.9 ± 0.9)	(11.6 ± 0.6)	(9.10 ± 0.5)	(11.0 ± 0.4)	(19.3 ± 0.8)	(8.40 ± 0.3)	(8.80 ± 0.4)	(11.3 ± 0.6)
NBS Concen.	PPB	(12.1 ± 1.9)	(15.8 ± 2.0)	(11.6 ± 0.3)	(9.14 ± 0.6)	(11.3 ± 0.6)	(23.0 ± 0.6)	(9.41 ± 0.4)	(9.61 ± 0.3)	(11.9 ± 0.3)
5th Analysis	Day	749	749	773	767	773	773	773	773	767
	PPB	(13.0 ± 0.9)	(16.1 ± 0.8)	(11.5 ± 0.6)	(9.80 ± 0.5)	(10.7 ± 0.3)	(20.4 ± 0.8)	(10.6 ± 0.4)	(10.2 ± 0.4)	(11.7 ± 0.6)
NBS Concen.	PPB	(12.1 ± 1.9)	(15.8 ± 2.0)	(11.6 ± 0.3)	(9.14 ± 0.6)	(11.3 ± 0.6)	(23.0 ± 0.6)	(9.41 ± 0.6)	(9.61 ± 0.3)	(11.9 ± 0.3)
6th Analysis	Day	901	901	901	901	901	901	901	901	901
	PPB	(12.8 ± 1.7)	(17.0 ± 0.8)	(11.5 ± 0.4)	(8.90 ± 0.3)	(10.8 ± 1.0)	(17.5 ± 0.7)	NA	(9.80 ± 0.4)	(11.7 ± 0.4)
NBS Concen.	PPB	(12.1 ± 1.9)	(15.8 ± 2.0)	(11.6 ± 0.3)	(9.14 ± 0.6)	(11.3 ± 0.6)	(23.0 ± 0.6)	(9.41 ± 0.6)	(9.61 ± 0.3)	(11.9 ± 0.3)

alibration was performed using permeation devices unless otherwise specified.
**Calibration was performed using stainless steel sphere dilution method.
***Number of days after 1st RTI analysis date.
****NBS primary standard was analyzed as internal Quality Control on each day of RTI analysis unless otherwise indicated. No Quality Control with NBS primary standards was performed during RTI 1st and 2nd analysis.

† = Questionable value.
NC = This compound was not included in this cylinder.
NA = Not Analyzed.

STABILITY STUDY FOR GROUP II COMPOUNDS*
CYLINDER II-A6

ACTIVITY	COMPOUND								
	Acetonitrile	Methyl Ethyl Ketone	Trichloro-ethylene	1,2-Dichloro-ethane	Trichloro-fluoro-methane (F-11)	Bromomethane	Dichlorodi-fluorometh-ane (F-12)	1,2-Dibro-moethane	1,1,1-Trichloro-ethane
MANUFACTURER ANALYSIS									
Theoretical PPB	(15.9)	(16.3)	(16.2)	(16.0)	(15.0)	(15.0)	(15.0)	(16.2)	(15.8)
1st Analysis Date	3/14/84	3/14/84	3/14/84	3/14/84	3/20/84	5/14/84	3/20/84	3/14/84	3/14/84
PPB	(8.60)	(7.00)	(15.8)	(11.4)	(10.8)	(13.3)	(15.5)	(17.5)	(11.1)
2nd Analysis Date	3/30/84	3/30/84	3/30/84	3/30/84	4/06/84	8/19/84	4/06/84	3/30/84	3/30/84
PPB	(8.00)	(7.10)	(18.3)	(12.7)	(13.9)	(12.2)	(14.2)	(18.2)	(14.4)
RTI ANALYSIS***									
1st Analysis Date	5/24/84	5/24/84	5/14/84	5/20/84	5/14/84**	5/14/84	5/14/84**	5/14/84**	5/20/84
PPB	(12.0 ± 0.8)	(7.50 ± 0.4)	(15.6 ± 0.7)	(14.2 ± 0.7)	(13.4 ± 0.5)	(15.2 ± 0.6)	(13.6 ± 0.6)	(16.6 ± 0.7)	(17.4 ± 0.9)†
2nd Analysis Day***	87	87	98	93	98	98	98	98	93
PPB	(11.6 ± 0.8)	(6.70 ± 0.4)	(15.4 ± 0.7)	(15.7 ± 0.8)	(15.4 ± 0.5)	(14.9 ± 0.6)	(16.6 ± 0.7)	(16.0 ± 0.7)	(15.3 ± 0.8)
3rd Analysis Day***	309	309		310					310
PPB	(12.6 ± 0.9)	(7.30 ± 0.4)	on audit	(14.2 ± 0.7)	on audit	on audit	on audit	on audit	(14.3 ± 0.7)
4th Analysis Day***	454	454	449	443	449	449	449	449	443
PPB	(12.2 ± 0.8)	(7.50 ± 0.4)	(15.1 ± 0.7)	(15.8 ± 0.8)	(16.2 ± 0.5)	(14.0 ± 0.5)	(16.0 ± 0.7)	(11.8 ± 0.5)	(14.0 ± 0.7)
5th Analysis Day***	749	749	772	766	772	772	772	772	766
PPB	(13.1 ± 0.9)	(10.9 ± 0.6)	(14.4 ± 0.7)	(12.5 ± 0.6)	(15.6 ± 0.5)	(10.4 ± 0.4)	(16.4 ± 0.6)	(12.1 ± 0.5)	(14.8 ± 0.8)
6th Analysis Day***	901	901	901	901	901	901	901	901	901
PPB	(12.8 ± 1.7)	(7.50 ± 0.4)	(15.6 ± 0.5)	(14.8 ± 0.5)	(16.9 ± 1.4)	(13.0 ± 0.6)	NA	(13.6 ± 0.5)	(14.4 ± 0.4)

(Continued)

*Calibration was performed using permeation devices unless otherwise specified. An NBS primary standard was used for calibration for 6th analysis.
**Calibration was performed using stainless steel sphere dilution method.
***Number of days after 1st RTI analysis date.
****A different NBS primary standard was analyzed as internal Quality Control on each day of RTI analysis. No Quality Control with NBS primary standards was performed during RTI 1st and 2nd analysis.
*****Sixth RTI analysis was performed using automated cryogenic preconcentration with cryofocusing followed by GC/FID.

† = Questionable value.
NC = This compound was not included in this cylinder.
NA = Not Analyzed.

STABILITY STUDY FOR GROUP II COMPOUNDS* (Continued)
CYLINDER II-A6

ACTIVITY	COMPOUND								
	Acetonitrile	Methyl Ethyl Ketone	Trichloro-ethylene	1,2-Dichloro-ethane	Trichloro-fluoro-methane (F-11)	Bromomethane	Dichlorodi-fluoromeths-ane (F-12)	1,2-Dibro-moethane	1,1,1-Trichloro-ethane
RTI QUALITY CONTROL****									
3rd Analysis Day	309	309	297	310	297	297	297	297	310
PPB	(14.1 ± 1.0)	(16.9 ± 0.9)	(10.9 ± 0.5)	(8.80 ± 0.4)	(10.7 ± 0.4)	(19.4 ± 0.8)	(8.20 ± 0.3)	(9.50 ± 0.4)	(11.4 ± 0.6)
NBS Concen. PPB	(12.1 ± 1.9)	(15.8 ± 2.0)	(11.6 ± 0.3)	(9.14 ± 0.6)	(11.3 ± 0.6)	(23.0 ± 0.6)	(9.41 ± 0.4)	(9.61 ± 0.3)	(11.9 ± 0.3)
4th Analysis Day	454	454	449	443	449	449	449	449	443
PPB	(14.0 ± 1.0)	(16.9 ± 0.9)	(11.6 ± 0.6)	(9.10 ± 0.5)	(11.0 ± 0.4)	(19.3 ± 0.8)	(8.40 ± 0.3)	(8.80 ± 0.4)	(11.3 ± 0.6)
NBS Concen. PPB	(12.1 ± 1.9)	(15.8 ± 2.0)	(11.6 ± 0.3)	(9.14 ± 0.6)	(11.3 ± 0.6)	(23.0 ± 0.6)	(9.41 ± 0.4)	(9.61 ± 0.3)	(11.9 ± 0.3)
5th Analysis Day	749	749	772	766	772	772	772	772	766
PPB	(13.0 ± 0.9)	(16.1 ± 0.8)	(10.9 ± 0.5)	(9.50 ± 0.5)	(10.6 ± 0.3)	(19.9 ± 0.8)	(10.8 ± 0.4)	(9.70 ± 0.4)	(11.8 ± 0.6)
NBS Concen. PPB	(12.1 ± 1.9)	(15.8 ± 2.0)	(11.6 ± 0.3)	(9.14 ± 0.6)	(11.3 ± 0.6)	(23.0 ± 0.6)	(9.41 ± 0.6)	(9.61 ± 0.3)	(11.9 ± 0.3)
6th Analysis Day	901	901	901	901	901	901	901	901	901
PPB	(12.8 ± 1.7)	(17.0 ± 0.8)	(11.5 ± 0.4)	(8.90 ± 0.3)	(10.8 ± 0.9)	(17.5 ± 0.7)	NA	(9.80 ± 0.4)	(11.7 ± 0.4)
NBS Concen. PPB	(12.1 ± 1.9)	(15.8 ± 2.0)	(11.6 ± 0.3)	(9.14 ± 0.6)	(11.3 ± 0.6)	(23.0 ± 0.6)	(9.41 ± 0.6)	(9.61 ± 0.3)	(11.9 ± 0.3)

*Calibration was performed using permeation devices unless otherwise specified. An NBS primary standard was used for calibration for 6th analysis.
**Calibration was performed using stainless steel sphere dilution method.
***Number of days after 1st RTI analysis date.
****A different NBS primary standard was analyzed as internal Quality Control on each day of RTI analysis. No Quality Control with NBS primary standards was performed during RTI 1st and 2nd analysis.
*****Sixth RTI analysis was performed using automated cryogenic preconcentration with cryofocusing followed by GC/FID.

† = Questionable value.
NC = This compound was not included in this cylinder.
NA = Not Analyzed.

STABILITY STUDY FOR GROUP II COMPOUNDS*
CYLINDER II-A7

ACTIVITY	COMPOUND								
	Acetonitrile	Methyl Ethyl Ketone	Trichloro-ethylene	1,2-Dichloro-ethane	Trichloro-fluoro-methane (F-11)	Bromomethane	Dichlorodi-fluoromethane (F-12)	1,2-Dibro-moethane	1,1,1-Trichloro-ethane
MANUFACTURER ANALYSIS									
Theoretical PPB	(10.0)	(10.0)	(10.0)	(12.0)	(10.1)	(10.4)	(9.90)	(10.0)	(10.0)
1st Analysis Date	11/13/84	11/13/84	11/13/84	11/13/84	12/12/84	12/12/84	12/12/84	11/13/84	11/13/84
PPB	(11.7)	(9.30)	(9.10)	(8.60)	(9.90)	(9.50)	(8.70)	(10.4)	(10.0)
2nd Analysis Date	1/02/85	1/02/85	1/02/85	1/02/85	1/18/85	1/18/85	1/18/85	1/02/85	1/02/85
PPB	(8.70)	(9.10)	(9.30)	(8.30)	(8.30)	(8.10)	(9.50)	(10.7)	(10.4)
RTI ANALYSIS									
1st Analysis Date	3/29/85	3/29/85	3/07/85	3/15/85	3/07/85	3/07/85	3/07/85	3/07/85	3/15/85
PPB	(7.90 ± 0.6)	(9.60 ± 0.5)	(9.00 ± 0.4)	(9.80 ± 0.5)	(9.40 ± 0.3)	(10.8 ± 0.4)	(9.90 ± 0.4)	(10.2 ± 0.4)	(10.1 ± 0.5)
2nd Analysis Day***	on audit	on audit	on audit	on audit	on audit	on audit	on audit	on audit	on audit
PPB				466	474	474	474	474	466
3rd Analysis Day***	439	439	474	(10.5 ± 0.5)	(9.40 ± 0.3)	(10.1 ± 0.4)	(10.6 ± 0.4)	(9.30 ± 0.4)	(8.50 ± 0.4)
PPB	(9.30 ± 0.7)	(12.7 ± 0.7)	(8.60 ± 0.4)						
4th Analysis Day***	empty	empty	empty	empty	empty	empty	empty	empty	empty
PPB									
RTI QUALITY CONTROL**									
1st Analysis Date	3/29/85	3/29/85	3/07/85	3/15/85	3/07/85	3/07/85	3/07/85	3/07/85	3/15/85
PPB	(14.1 ± 1.0)	(16.9 ± 0.9)	(10.9 ± 0.5)	(9.30 ± 0.5)	(10.7 ± 0.4)	(19.4 ± 0.8)	(8.20 ± 0.3)	(9.50 ± 0.4)	(11.9 ± 0.6)
NBS Concen. PPB	(12.1 ± 1.9)	(15.8 ± 2.0)	(11.6 ± 0.3)	(9.14 ± 0.6)	(11.3 ± 0.6)	(23.0 ± 0.6)	(9.41 ± 0.4)	(9.61 ± 0.3)	(11.9 ± 0.3)
2nd Analysis Day	147	147	152	144	152	152	152	152	144
PPB	(12.0 ± 0.8)	(14.1 ± 0.8)	(11.6 ± 0.6)	(9.10 ± 0.5)	(11.0 ± 0.4)	(19.3 ± 0.8)	(8.40 ± 0.3)	(8.80 ± 0.4)	(11.3 ± 0.6)
NBS Concen. PPB	(12.1 ± 1.9)	(15.8 ± 2.0)	(11.6 ± 0.3)	(9.14 ± 0.6)	(11.3 ± 0.6)	(23.0 ± 0.6)	(9.41 ± 0.4)	(9.61 ± 0.3)	(11.9 ± 0.3)
3rd Analysis Day	439	439	474	466	474	474	474	474	466
PPB	(13.0 ± 0.9)	(16.1 ± 0.8)	(10.9 ± 0.5)	(9.50 ± 0.5)	(10.6 ± 0.3)	(19.9 ± 0.8)	(10.8 ± 0.4)	(9.70 ± 0.4)	(11.8 ± 0.6)
NBS Concen. PPB	(12.1 ± 1.9)	(15.8 ± 2.0)	(11.6 ± 0.3)	(9.14 ± 0.6)	(11.3 ± 0.6)	(23.0 ± 0.6)	(9.41 ± 0.6)	(9.61 ± 0.3)	(11.9 ± 0.3)
4th Analysis Day	749	749	772	766	722	722	722	722	722
PPB	(14.0 ± 1.0)	(16.9 ± 0.9)	(11.6 ± 0.5)	(9.10 ± 0.5)	(11.0 ± 0.4)	(19.3 ± 0.8)	(8.40 ± 0.3)	(9.50 ± 0.4)	(11.4 ± 0.6)
NBS Concen. PPB	(12.1 ± 1.9)	(15.8 ± 2.0)	(11.6 ± 0.3)	(9.14 ± 0.6)	(11.3 ± 0.6)	(23.0 ± 0.6)	(9.41 ± 0.4)	(9.61 ± 0.3)	(11.9 ± 0.3)

*Calibration was performed using permeation devices unless otherwise specified.
**Calibration was performed using stainless steel sphere dilution method.
***Number of days after 1st RTI analysis date.
****NBS primary standard was analyzed as internal Quality Control on each day of RTI analysis unless otherwise indicated.

NC = This compound was not included in this cylinder.

STABILITY STUDY FOR GROUP II COMPOUNDS*
CYLINDER II-A8

ACTIVITY	COMPOUND								
	Acetonitrile	Methyl Ethyl Ketone	Trichloro-ethylene	1,2-Dichloro-ethane	Trichloro-fluoro-methane (F-11)	Bromomethane	Dichlorodi-fluoromethane (F-12)	1,2-Dibro-moethane	1,1,1-Trichloro-ethane
				MANUFACTURER ANALYSIS					
Theoretical PPB	(10.0)	(10.0)	(10.0)	(10.0)	(10.1)	(10.0)	(9.90)	(10.0)	(10.0)
1st Analysis Date	11/06/84	11/06/84	11/06/84	11/06/84	12/11/84	12/11/84	12/11/84	11/06/84	11/06/84
PPB	(8.40)	(9.40)	(9.30)	(8.70)	(9.80)	(8.70)	(9.20)	(10.5)	(10.3)
2nd Analysis Date	12/28/84	12/28/84	12/28/84	12/28/84	1/15/85	1/15/85	12/28/84	12/28/84	1/02/85
PPB	(11.0)	(9.20)	(9.40)	(8.70)	(11.9)	(9.20)	(9.60)	(11.2)	(10.6)
				RTI ANALYSIS**					
1st Analysis Date	3/29/85	3/29/85	3/07/85	3/15/85	3/07/85	3/07/85	3/07/85	3/07/85	3/15/85
PPB	(10.7 ± 0.7)	(9.60 ± 0.5)	(9.20 ± 0.4)	(10.3 ± 0.5)	(9.60 ± 0.3)	(10.6 ± 0.4)	(9.90 ± 0.4)	(10.2 ± 0.4)	(10.1 ± 0.5)
2nd Analysis Day***	147	147	152	144	152	152	152	152	144
PPB	(10.1 ± 0.7)	(9.00 ± 0.5)	(9.50 ± 0.5)	(8.50 ± 0.4)	(9.70 ± 0.3)	(11.4 ± 0.4)	(10.5 ± 0.4)	(8.50 ± 0.3)	(9.40 ± 0.5)
3rd Analysis Day***	442	442	474	466	474	474	474	474	466
PPB	(10.2 ± 0.7)	(9.70 ± 0.5)	(8.90 ± 0.4)	(12.6 ± 0.7)	(10.3 ± 0.3)	(11.0 ± 0.4)	(11.8 ± 0.5)	(10.1 ± 0.4)	(10.5 ± 0.6)
4th Analysis Day***	852	852	852	852	852	852	852	852	852
PPB	NA	(8.80 ± 0.4)	(10.5 ± 0.3)	(10.4 ± 0.3)	(10.0 ± 0.9)	(11.4 ± 0.5)	NA	NA	(10.0 ± 0.3)

*Calibration was performed using permeation devices unless otherwise specified. An NBS primary standard was used for calibration for 4th analysis.
**Fourth analysis was performed using automated cryogenic preconcentration with cryofocusing.
***Number of days after 1st RTI analysis date.
****A different NBS primary standard was analyzed as internal Quality Control on each day of RTI analysis.

NC = This compound was not included in this cylinder.
NA = Not Analyzed.

(Continued)

STABILITY STUDY FOR GROUP II COMPOUNDS* (Continued)
CYLINDER II-A8

ACTIVITY	COMPOUND								
	Acetonitrile	Methyl Ethyl Ketone	Trichloro-ethylene	1,2-Dichloro-ethane	Trichloro-fluoro-methane (F-11)	Bromomethane	Dichlorodi-fluorometh-ane (F-12)	1,2-Dibro-moethane	1,1,1-Trichloro-ethane
				RTI QUALITY CONTROL****					
1st Analysis Date	3/29/85	3/29/85	3/07/85	3/15/85	3/07/85	3/07/85	3/07/85	3/07/85	3/15/85
PPB	(14.1 ± 1.0)	(16.9 ± 0.9)	(10.9 ± 0.5)	(9.30 ± 0.5)	(10.7 ± 0.4)	(19.4 ± 0.8)	(8.20 ± 0.3)	(9.50 ± 0.4)	(11.9 ± 0.6)
NBS Concen. PPB	(12.1 ± 1.9)	(15.8 ± 2.0)	(11.6 ± 0.3)	(9.14 ± 0.6)	(11.3 ± 0.6)	(23.0 ± 0.6)	(9.41 ± 0.4)	(9.61 ± 0.3)	(11.9 ± 0.3)
2nd Analysis Day	147	147	152	144	152	152	152	152	144
PPB	(12.0 ± 0.8)	(14.1 ± 0.8)	(11.6 ± 0.6)	(9.10 ± 0.5)	(11.0 ± 0.4)	(19.3 ± 0.8)	(8.40 ± 0.3)	(8.80 ± 0.4)	(11.3 ± 0.6)
NBS Concen. PPB	(12.1 ± 1.9)	(15.8 ± 2.0)	(11.6 ± 0.3)	(9.14 ± 0.6)	(11.3 ± 0.6)	(23.0 ± 0.6)	(9.41 ± 0.4)	(9.61 ± 0.3)	(11.9 ± 0.3)
3rd Analysis Day	442	442	474	466	474	474	474	474	466
PPB	(13.6 ± 0.9)	(16.0 ± 0.8)	(10.9 ± 0.5)	(9.50 ± 0.5)	(10.6 ± 0.3)	(19.9 ± 0.8)	(10.8 ± 0.4)	(9.70 ± 0.4)	(11.8 ± 0.6)
NBS Concen. PPB	(12.1 ± 1.9)	(15.8 ± 2.0)	(11.6 ± 0.3)	(9.14 ± 0.6)	(11.3 ± 0.6)	(23.0 ± 0.6)	(9.41 ± 0.6)	(9.61 ± 0.3)	(11.9 ± 0.3)
4th Analysis Day	852	852	852	852	852	852	852	852	852
PPB	(13.2 ± 1.8)	(17.2 ± 0.8)	(11.7 ± 0.4)	(9.40 ± 0.3)	(11.4 ± 1.0)	(18.6 ± 0.8)	NA	(10.6 ± 0.4)	(12.0 ± 0.4)
NBS Concen. PPB	(12.1 ± 1.9)	(15.8 ± 2.0)	(11.6 ± 0.3)	(9.14 ± 0.6)	(11.3 ± 0.6)	(23.0 ± 0.6)	(9.41 ± 0.6)	(9.61 ± 0.3)	(11.9 ± 0.3)

*Calibration was performed using permeation devices unless otherwise specified. An NBS primary standard was used for calibration for 4th analysis.
**Fourth analysis was performed using automated cryogenic preconcentration with cryofocusing followed by GC/FID.
***Number of days after 1st RTI analysis date.
****A different NBS primary standard was analyzed as internal Quality Control on each day of RTI analysis.

NC = This compound was not included in this cylinder.
NA = Not Analyzed.

STABILITY STUDY FOR GROUP II COMPOUNDS*
CYLINDER II-A9

ACTIVITY		COMPOUND								
		Acetonitrile	Methyl Ethyl Ketone	Trichloroethylene	1,2-Dichloroethane	Trichlorofluoromethane (F-11)	Bromomethane	Dichlorodifluoromethane (F-12)	1,2-Dibromoethane	1,1,1-Trichloroethane
MANUFACTURER ANALYSIS										
Theoretical	PPB	(10.0)	(10.0)	(10.0)	(10.0)	(10.1)	(10.2)	(9.90)	(10.0)	(10.0)
1st Analysis	Date	11/07/84	11/07/84	11/07/84	11/07/84	12/01/84	12/01/84	12/01/84	11/07/84	11/07/84
	PPB	(8.40)	(9.20)	(9.10)	(8.10)	(11.8)	(8.90)	(9.40)	(10.4)	(10.2)
2nd Analysis	Date	12/31/84	12/31/84	12/31/84	12/31/84	1/15/85	1/15/85	1/15/85	12/31/84	12/31/85
	PPB	(8.80)	(9.00)	(9.10)	(8.50)	(11.9)	(8.40)	(12.1)	(10.6)	(10.4)
RTI ANALYSIS**										
1st Analysis	Date	3/29/85	3/29/85	3/07/85	3/15/85	3/07/85	3/07/85	3/07/85	3/07/85	3/15/85
	PPB	(10.7 ± 0.7)	(9.60 ± 0.5)	(9.00 ± 0.4)	(10.0 ± 0.5)	(9.50 ± 0.3)	(10.7 ± 0.4)	(9.50 ± 0.4)	(10.3 ± 0.4)	(10.0 ± 0.5)
2nd Analysis	Day***	147	147	152	144	152	152	152	152	144
	PPB	(10.1 ± 0.7)	(8.90 ± 0.5)	(9.40 ± 0.5)	(7.70 ± 0.4)	(9.60 ± 0.3)	(11.2 ± 0.4)	(10.4 ± 0.4)	(7.80 ± 0.3)	(9.30 ± 0.5)
3rd Analysis	Day***	443	443	474	466	474	474	474	474	466
	PPB	(10.2 ± 0.7)	(11.3 ± 0.6)	(9.30 ± 0.5)	(9.20 ± 0.5)	(9.70 ± 0.3)	(9.30 ± 0.4)	(12.2 ± 0.5)	(10.7 ± 0.4)	(9.80 ± 0.5)
4th Analysis	Day***	852	852	852	852	852	852	852	852	852
	PPB	NA	(8.20 ± 0.4)	(9.20 ± 0.3)	(8.98 ± 0.3)	(9.60 ± 0.8)	(8.90 ± 0.4)	NA	(10.8 ± 0.4)	NA

(Continued)

*Calibration was performed using permeation devices unless otherwise specified. An NBS primary standard was used for calibration for 4th analysis.
**Fourth analysis was performed using automated cryogenic preconcentration with cryofocusing.
***Number of days after 1st RTI analysis date.
****A different NBS primary standard was analyzed as internal Quality Control on each day of RTI analysis.

NC = This compound was not included in this cylinder.
NA = Not Analyzed.

STABILITY STUDY FOR GROUP II COMPOUNDS* (Continued)
CYLINDER II-A9

ACTIVITY		COMPOUND								
		Acetonitrile	Methyl Ethyl Ketone	Trichloro-ethylene	1,2-Dichloro-ethane	Trichloro-fluoro-methane (F-11)	Bromomethane	Dichlorodi-fluorometh-ane (F-12)	1,2-Dibro-moethane	1,1,1-Trichloro-ethane
RTI QUALITY CONTROL****										
1st Analysis	Date	3/29/85	3/29/85	3/07/85	3/15/85	3/07/85	3/07/85	3/07/85	3/07/85	3/15/85
	PPB	(14.1 ± 1.0)	(16.9 ± 0.9)	(10.9 ± 0.5)	(9.30 ± 0.5)	(10.7 ± 0.4)	(19.4 ± 0.8)	(8.20 ± 0.3)	(9.50 ± 0.4)	(11.9 ± 0.6)
NBS Concen.	PPB	(12.1 ± 1.9)	(15.8 ± 2.0)	(11.6 ± 0.3)	(9.14 ± 0.6)	(11.3 ± 0.6)	(23.0 ± 0.6)	(9.41 ± 0.4)	(9.61 ± 0.3)	(11.9 ± 0.3)
2nd Analysis	Day	147	147	152	144	152	152	152	152	144
	PPB	(12.0 ± 0.8)	(14.1 ± 0.8)	(11.6 ± 0.6)	(9.10 ± 0.5)	(11.0 ± 0.4)	(19.3 ± 0.8)	(8.40 ± 0.3)	(8.80 ± 0.4)	(11.3 ± 0.6)
NBS Concen.	PPB	(12.1 ± 1.9)	(15.8 ± 2.0)	(11.6 ± 0.3)	(9.14 ± 0.6)	(11.3 ± 0.6)	(23.0 ± 0.6)	(9.41 ± 0.4)	(9.61 ± 0.3)	(11.9 ± 0.3)
3rd Analysis	Day	443	443	474	466	474	474	474	474	466
	PPB	(13.6 ± 0.9)	(16.1 ± 0.8)	(10.9 ± 0.5)	(9.50 ± 0.5)	(10.6 ± 0.3)	(19.9 ± 0.8)	(10.8 ± 0.4)	(9.70 ± 0.4)	(11.8 ± 0.6)
NBS Concen.	PPB	(12.1 ± 1.9)	(15.8 ± 2.0)	(11.6 ± 0.3)	(9.14 ± 0.6)	(11.3 ± 0.6)	(23.0 ± 0.6)	(9.41 ± 0.6)	(9.61 ± 0.3)	(11.9 ± 0.3)
4th Analysis	Day	852	852	852	852	852	852	852	852	852
	PPB	(13.2 ± 1.8)	(17.2 ± 0.8)	(11.8 ± 0.4)	(9.36 ± 0.3)	(11.4 ± 1.0)	(18.4 ± 0.4)	NA	(10.6 ± 0.4)	(12.0 ± 0.4)
NBS Concen.	PPB	(12.1 ± 1.9)	(15.8 ± 2.0)	(11.6 ± 0.3)	(9.14 ± 0.6)	(11.3 ± 0.6)	(23.0 ± 0.6)	(9.41 ± 0.6)	(9.61 ± 0.3)	(11.9 ± 0.3)

*Calibration was performed using permeation devices unless otherwise specified. An NBS primary standard was used for calibration for 4th analysis.
**Fourth analysis was performed using automated cryogenic preconcentration with cryofocusing followed by GC/FID.
***Number of days after 1st RTI analysis date.
****A different NBS primary standard was analyzed as internal Quality Control on each day of RTI analysis.

NC = This compound was not included in this cylinder.
NA = Not Analyzed.

STABILITY STUDY FOR GROUP II COMPOUNDS*
CYLINDER II-A10

ACTIVITY		COMPOUND								
		Acetonitrile	Methyl Ethyl Ketone	Trichloro-ethylene	1,2-Dichloro-ethane	Trichloro-fluoro-methane (F-11)	Bromomethane	Dichlorodi-fluorometh-ane (F-12)	1,2-Dibro-moethane	1,1,1-Trichloro-ethane
MANUFACTURER ANALYSIS										
Theoretical	PPB	(30.1)	(30.0)	(30.0)	(30.0)	(30.9)	(30.0)	(29.2)	(30.0)	(30.0)
1st Analysis	Date	11/14/84	11/14/84	11/14/84	11/14/84	12/26/84	12/26/84	12/26/84	11/14/84	11/14/84
	PPB	(27.7)	(27.8)	(27.7)	(24.9)	(25.4)	(29.3)	(26.2)	(32.4)	(30.1)
2nd Analysis	Date	1/04/85	1/04/85	1/04/85	1/04/85	1/22/85	1/22/85	1/22/85	1/04/85	1/04/85
	PPB	(34.3)	(29.0)	(26.8)	(26.8)	(27.7)	(30.1)	(27.9)	(33.3)	(31.7)
RTI ANALYSIS**										
1st Analysis	Date	3/27/85	3/27/85	3/05/85	3/13/85	3/05/85	3/05/85	3/05/85	3/05/85	3/13/85
	PPB	(26.8 ± 1.9)	(28.0 ± 1.5)	(28.8 ± 1.4)	(30.2 ± 1.5)	(29.7 ± 1.0)	(32.1 ± 1.3)	(31.4 ± 1.3)	(30.8 ± 1.3)	(30.6 ± 1.5)
2nd Analysis	Day***	147	147	155	147	155	155	155	155	147
	PPB	(24.2 ± 1.7)	(29.0 ± 1.6)	(28.2 ± 1.4)	(27.3 ± 1.4)	(29.5 ± 1.0)	(31.4 ± 1.2)	(29.4 ± 1.2)	(32.6 ± 1.3)	(27.7 ± 1.4)
3rd Analysis	Day***	445	445	472	464	472	472	472	472	464
	PPB	(27.1 ± 1.9)	(27.4 ± 1.4)	(29.6 ± 1.5)	(28.6 ± 1.5)	(32.1 ± 1.0)	(30.5 ± 1.2)	(26.1 ± 1.0)	(30.4 ± 1.3)	(30.1 ± 1.6)
4th Analysis	Day***	on audit	on audit	on audit	on audit	on audit	on audit	on audit	on audit	on audit
	PPB									

(Continued)

*Calibration was performed using permeation devices unless otherwise specified. An NBS primary standard was used for calibration for 4th analysis.
**Fourth analysis was performed using automated cryogenic preconcentration with cryofocusing.
***Number of days after 1st RTI analysis date.
****A different NBS primary standard was analyzed as internal Quality Control on each day of RTI analysis.

NC = This compound was not included in this cylinder.

STABILITY STUDY FOR GROUP II COMPOUNDS* (Continued)
CYLINDER II-A10

ACTIVITY	COMPOUND								
	Acetonitrile	Methyl Ethyl Ketone	Trichloro-ethylene	1,2-Dichloro-ethane	Trichloro-fluoro-methane (F-11)	Bromomethane	Dichlorodi-fluorometh-ane (F-12)	1,2-Dibro-moethane	1,1,1-Trichloro-ethane
RTI QUALITY CONTROL****									
1st Analysis Date	3/27/85	3/27/85	3/05/85	3/13/85	3/05/85	3/05/85	3/05/85	3/05/85	3/13/85
PPB	(13.2 ± 0.9)	(16.8 ± 0.9)	(11.4 ± 0.5)	(9.50 ± 0.5)	(11.1 ± 0.4)	(21.0 ± 0.8)	(9.10 ± 0.4)	(10.0 ± 0.4)	(12.5 ± 0.6)
NBS Concen. PPB	(12.1 ± 1.9)	(15.8 ± 2.0)	(11.6 ± 0.3)	(9.14 ± 0.6)	(11.3 ± 0.6)	(23.0 ± 0.6)	(9.41 ± 0.4)	(9.61 ± 0.3)	(11.9 ± 0.3)
2nd Analysis Day	147	147	155	147	155	155	155	155	147
PPB	(12.5 ± 0.9)	(16.9 ± 0.9)	(11.3 ± 0.5)	(8.60 ± 0.4)	(11.2 ± 0.4)	(18.9 ± 0.7)	(8.30 ± 0.3)	(9.10 ± 0.4)	(11.3 ± 0.6)
NBS Concen. PPB	(12.1 ± 1.9)	(15.8 ± 2.0)	(11.6 ± 0.3)	(9.14 ± 0.6)	(11.3 ± 0.6)	(23.0 ± 0.6)	(9.41 ± 0.4)	(9.61 ± 0.3)	(11.9 ± 0.3)
3rd Analysis Day	445	445	472	464	472	472	472	472	464
PPB	(13.6 ± 0.9)	(16.1 ± 0.8)	(11.5 ± 0.6)	(9.80 ± 0.5)	(10.7 ± 0.3)	(20.4 ± 0.8)	(10.6 ± 0.4)	(10.2 ± 0.4)	(11.7 ± 0.6)
NBS Concen. PPB	(12.1 ± 1.9)	(15.8 ± 2.0)	(11.6 ± 0.3)	(9.14 ± 0.6)	(11.3 ± 0.6)	(23.0 ± 0.6)	(9.41 ± 0.6)	(9.61 ± 0.3)	(11.9 ± 0.3)
4th Analysis Day	852	852	852	852	852	852	852	852	852
PPB	(13.2 ± 1.8)	(17.2 ± 0.8)	(11.8 ± 0.4)	(9.36 ± 0.3)	(11.4 ± 1.0)	(18.4 ± 0.4)	NA	(10.6 ± 0.4)	(12.0 ± 0.4)
NBS Concen. PPB	(12.1 ± 1.9)	(15.8 ± 2.0)	(11.6 ± 0.3)	(9.14 ± 0.6)	(11.3 ± 0.6)	(23.0 ± 0.6)	(9.41 ± 0.6)	(9.61 ± 0.3)	(11.9 ± 0.3)

*Calibration was performed using permeation devices unless otherwise specified. An NBS primary standard was used for calibration for 4th analysis.
**Fourth analysis was performed using automated cryogenic preconcentration with cryofocusing followed by GC/FID.
***Number of days after 1st RTI analysis date.
****A different NBS primary standard was analyzed as internal Quality Control on each day of RTI analysis.

NC = This compound was not included in this cylinder.
NA = Not Analyzed.

STABILITY STUDY FOR GROUP II COMPOUNDS*
CYLINDER II-A11

ACTIVITY		COMPOUND								
		Acetonitrile	Methyl Ethyl Ketone	Trichloro-ethylene	1,2-Dichloro-ethane	Trichloro-fluoro-methane (F-11)	Bromomethane	Dichlorodi-fluoromeths-ane (F-12)	1,2-Dibro-moethane	1,1,1-Trichloro-ethane
MANUFACTURER ANALYSIS										
Theoretical	PPB	(30.1)	(30.0)	(30.0)	(30.0)	(30.3)	(30.0)	(29.7)	(30.0)	(30.0)
1st Analysis	Date	11/28/84	11/28/84	11/28/84	11/28/84	12/21/84	12/21/84	12/21/84	11/28/84	11/28/84
	PPB	(30.9)	(24.9)	(27.8)	(24.4)	(31.6)	(29.0)	(24.9)	(32.2)	(30.0)
2nd Analysis	Date	1/04/85	1/04/85	1/04/85	1/04/85	1/22/85	1/22/85	1/22/85	1/04/85	1/04/85
	PPB	(27.1)	(29.3)	(27.1)	(25.3)	(28.0)	(29.7)	(29.3)	(32.4)	(30.8)
RTI ANALYSIS**										
1st Analysis	Date	3/27/85	3/27/85	3/05/85	3/13/85	3/05/85	3/05/85	3/05/85	3/05/85	3/13/85
	PPB	(26.1 ± 1.8)	(26.7 ± 1.5)	(28.9 ± 1.4)	(30.2 ± 1.5)	(30.5 ± 1.0)	(32.4 ± 1.3)	(32.2 ± 1.3)	(31.1 ± 1.3)	(30.6 ± 1.5)
2nd Analysis	Day***	147	147	155	147	155	155	155	155	147
	PPB	(24.1 ± 1.7)	(28.0 ± 1.5)	(27.6 ± 1.3)	(26.3 ± 1.3)	(29.7 ± 1.0)	(31.3 ± 1.2)	(29.7 ± 1.2)	(33.7 ± 1.4)	(27.5 ± 1.4)
3rd Analysis	Day***	444	444	476	470	476	476	476	476	470
	PPB	(27.1 ± 1.9)	(25.8 ± 1.4)	(29.5 ± 1.5)	(27.8 ± 1.4)	(32.9 ± 1.0)	(30.7 ± 1.2)	(26.2 ± 1.0)	(30.4 ± 1.3)	(29.8 ± 1.6)
4th Analysis	Day***	852	852	852	852	852	852	852	852	852
	PPB	(26.9 ± 3.6)	(25.9 ± 1.2)	(28.2 ± 0.9)	(28.3 ± 0.9)	(32.0 ± 2.7)	(30.1 ± 1.3)	NA	(30.9 ± 1.2)	(28.9 ± 0.9)

(Continued)

*Calibration was performed using permeation devices unless otherwise specified. An NBS primary standard was used for calibration for 4th analysis.
**Fourth analysis was performed using automated cryogenic preconcentration with cryofocusing followed by GC/FID.
***Number of days after 1st RTI analysis date.
****A different NBS primary standard was analyzed as internal Quality Control on each day of RTI analysis.

NC = This compound was not included in this cylinder.
NA = Not Analyzed.

STABILITY STUDY FOR GROUP II COMPOUNDS* (Continued)
CYLINDER II-A11

ACTIVITY		COMPOUND								
		Acetonitrile	Methyl Ethyl Ketone	Trichloro-ethylene	1,2-Dichloro-ethane	Trichloro-fluoro-methane (F-11)	Bromomethane	Dichlorodi-fluoromeths-ane (F-12)	1,2-Dibro-moethane	1,1,1-Trichloro-ethane
RTI QUALITY CONTROL****										
1st Analysis	Date	3/27/85	3/27/85	3/05/85	3/13/85	3/05/85	3/05/85	3/05/85	3/05/85	3/13/85
	PPB	(13.2 ± 0.9)	(16.8 ± 0.9)	(11.4 ± 0.5)	(9.50 ± 0.5)	(11.1 ± 0.4)	(21.0 ± 0.8)	(9.10 ± 0.4)	(10.0 ± 0.4)	(12.5 ± 0.6)
NBS Concen.	PPB	(12.1 ± 1.9)	(15.8 ± 2.0)	(11.6 ± 0.3)	(9.14 ± 0.59)	(11.3 ± 0.6)	(23.0 ± 0.6)	(9.41 ± 0.4)	(9.61 ± 0.3)	(11.9 ± 0.3)
2nd Analysis	Day	147	147	155	147	155	155	155	155	147
	PPB	(12.5 ± 0.9)	(16.9 ± 0.9)	(11.3 ± 0.5)	(8.60 ± 0.4)	(11.2 ± 0.4)	(18.9 ± 0.7)	(8.30 ± 0.3)	(9.10 ± 0.4)	(11.3 ± 0.6)
NBS Concen.	PPB	(12.1 ± 1.9)	(15.8 ± 2.0)	(11.6 ± 0.3)	(9.14 ± 0.6)	(11.3 ± 0.6)	(23.0 ± 0.6)	(9.41 ± 0.4)	(9.61 ± 0.3)	(11.9 ± 0.3)
3rd Analysis	Day	444	444	476	470	476	476	476	476	470
	PPB	(13.6 ± 0.9)	(16.0 ± 0.8)	(11.5 ± 0.6)	(9.80 ± 0.5)	(10.7 ± 0.3)	(20.4 ± 0.8)	(10.6 ± 0.4)	(10.2 ± 0.4)	(11.7 ± 0.6)
NBS Concen.	PPB	(12.1 ± 1.9)	(15.8 ± 2.0)	(11.6 ± 0.3)	(9.14 ± 0.59)	(11.3 ± 0.6)	(23.0 ± 0.6)	(9.41 ± 0.6)	(9.61 ± 0.3)	(11.9 ± 0.3)
4th Analysis	Day	852	852	852	852	852	852	852	852	852
	PPB	(13.2 ± 1.8)	(17.2 ± 0.8)	(11.8 ± 0.4)	(9.36 ± 0.3)	(11.4 ± 1.0)	(18.4 ± 0.8)	NA	(10.6 ± 0.4)	(12.0 ± 0.4)
NBS Concen.	PPB	(12.1 ± 1.9)	(15.8 ± 2.0)	(11.6 ± 0.3)	(9.14 ± 0.6)	(11.3 ± 0.6)	(23.0 ± 0.6)	(9.41 ± 0.6)	(9.61 ± 0.3)	(11.9 ± 0.3)

*Calibration was performed using permeation devices unless otherwise specified. An NBS primary standard was used for calibration for 4th analysis.
**Fourth analysis was performed using automated cryogenic preconcentration with cryofocusing followed by GC/FID.
***Number of days after 1st RTI analysis date.
****A different NBS primary standard was analyzed as internal Quality Control on each day of RTI analysis.

NC = This compound was not included in this cylinder.
NA = Not Analyzed.

STABILITY STUDY FOR GROUP II COMPOUNDS*
CYLINDER II-A12

ACTIVITY		COMPOUND								
		Acetonitrile	Methyl Ethyl Ketone	Trichloro-ethylene	1,2-Dichloro-ethane	Trichloro-fluoro-methane (F-11)	Bromomethane	Dichlorodi-fluorometh-ane (F-12)	1,2-Dibro-moethane	1,1,1-Trichloro-ethane
MANUFACTURER ANALYSIS										
Theoretical	PPB	(10.0)	(29.9)	(10.0)	(9.90)	(9.9)	(29.6)	(29.8)	(29.9)	(29.9)
1st Analysis	Date	12/03/84	12/03/84	12/03/84	12/03/84	12/12/84	12/12/84	12/12/84	12/03/84	12/03/84
	PPB	(7.60)	(27.1)	(9.40)	(9.40)	(7.80)	(27.4)	(36.2)	(32.1)	(32.7)
2nd Analysis	Date	1/08/85	1/08/85	1/08/85	1/08/85	1/21/85	1/21/85	1/21/85	1/08/85	1/08/85
	PPB	(8.70)	(28.1)	(9.70)	(8.90)	(9.70)	(27.4)	(33.2)	(34.1)	(32.5)
RTI ANALYSIS**										
1st Analysis	Date	3/29/85	3/29/85	3/07/85	3/14/85	3/07/85	3/07/85	3/07/85	3/07/85	3/14/85
	PPB	(10.4 ± 0.7)	(26.4 ± 1.5)	(9.60 ± 0.5)	(10.3 ± 0.5)	(9.70 ± 0.3)	(31.0 ± 1.2)	(31.0 ± 1.3)	(30.4 ± 1.2)	(30.2 ± 1.5)
2nd Analysis	Day***	146	146	153	146	153	153	153	153	146
	PPB	(10.4 ± 0.7)	(27.2 ± 1.5)	(9.60 ± 0.5)	(10.3 ± 0.5)	(9.20 ± 0.3)	(31.5 ± 1.2)	(30.5 ± 1.3)	(31.3 ± 1.3)	(29.3 ± 1.5)
3rd Analysis	Day***	442	442	474	469	474	474	474	474	469
	PPB	(10.2 ± 0.7)	(29.0 ± 1.5)	(10.1 ± 0.5)	(10.5 ± 0.5)	(9.80 ± 0.3)	(39.1 ± 1.6)	(27.7 ± 1.1)	(31.8 ± 1.3)	(33.9 ± 1.8)
4th Analysis	Day***	on audit	on audit	on audit	on audit	on audit	on audit	on audit	on audit	on audit
	PPB									

(Continued)

*Calibration was performed using permeation devices unless otherwise specified. An NBS primary standard was used for calibration for 4th analysis.
**Fourth analysis was performed using automated cryogenic preconcentration with cryofocusing.
***Number of days after 1st RTI analysis date.
****A different NBS primary standard was analyzed as internal Quality Control on each day of RTI analysis.

STABILITY STUDY FOR GROUP II COMPOUNDS* (Continued)
CYLINDER II-A12

ACTIVITY	COMPOUND								
	Acetonitrile	Methyl Ethyl Ketone	Trichloro-ethylene	1,2-Dichloro-ethane	Trichloro-fluoro-methane (F-11)	Bromomethane	Dichlorodi-fluorometh-ane (F-12)	1,2-Dibro-moethane	1,1,1-Trichloro-ethane
RTI QUALITY CONTROL****									
1st Analysis Date	3/29/85	3/29/85	3/07/85	3/14/85	3/07/85	3/07/85	3/07/85	3/07/85	3/14/85
PPB	(14.1 ± 1.0)	(16.1 ± 0.9)	(10.9 ± 0.5)	(8.80 ± 0.4)	(10.7 ± 0.4)	(19.4 ± 0.8)	(8.20 ± 0.3)	(9.50 ± 0.4)	(11.4 ± 0.6)
NBS Concen. PPB	(12.1 ± 1.9)	(15.8 ± 2.0)	(11.6 ± 0.3)	(9.14 ± 0.59)	(11.3 ± 0.6)	(23.0 ± 0.6)	(9.41 ± 0.4)	(9.61 ± 0.3)	(11.9 ± 0.3)
2nd Analysis Day	146	146	153	146	153	153	153	153	146
PPB	(13.3 ± 0.9)	(17.0 ± 0.9)	(11.3 ± 0.5)	(8.60 ± 0.4)	(11.2 ± 0.4)	(18.9 ± 0.7)	(8.30 ± 0.3)	(9.10 ± 0.4)	(11.3 ± 0.6)
NBS Concen. PPB	(12.1 ± 1.9)	(15.8 ± 2.0)	(11.6 ± 0.3)	(9.14 ± 0.6)	(11.3 ± 0.6)	(23.0 ± 0.6)	(9.41 ± 0.4)	(9.61 ± 0.3)	(11.9 ± 0.3)
3rd Analysis Day	442	442	474	469	474	474	474	474	469
PPB	(13.6 ± 0.9)	(16.0 ± 0.8)	(11.5 ± 0.6)	(9.80 ± 0.5)	(10.7 ± 0.3)	(20.4 ± 0.8)	(10.6 ± 0.4)	(10.2 ± 0.4)	(11.7 ± 0.6)
NBS Concen. PPB	(12.1 ± 1.9)	(15.8 ± 2.0)	(11.6 ± 0.3)	(9.14 ± 0.6)	(11.3 ± 0.6)	(23.0 ± 0.6)	(9.41 ± 0.6)	(9.61 ± 0.3)	(11.9 ± 0.3)
4th Analysis Day	852	852	852	852	852	852	852	852	852
PPB	(13.2 ± 1.8)	(17.2 ± 0.8)	(11.8 ± 0.4)	(9.36 ± 0.3)	(11.4 ± 1.0)	(18.4 ± 0.8)	NA	(10.6 ± 0.4)	(12.0 ± 0.4)
NBS Concen. PPB	(12.1 ± 1.9)	(15.8 ± 2.0)	(11.6 ± 0.3)	(9.14 ± 0.6)	(11.3 ± 0.6)	(23.0 ± 0.6)	(9.41 ± 0.6)	(9.61 ± 0.3)	(11.9 ± 0.3)

*Calibration was performed using permeation devices unless otherwise specified. An NBS primary standard was used for calibration for 4th analysis.
**Fourth analysis was performed using automated cryogenic preconcentration with cryofocusing followed by GC/FID.
***Number of days after 1st RTI analysis date.
****A different NBS primary standard was analyzed as internal Quality Control on each day of RTI analysis.

NA = Not Analyzed.

STABILITY STUDY FOR GROUP II COMPOUNDS*
CYLINDER II-A13

ACTIVITY	COMPOUND								
	Acetonitrile	Methyl Ethyl Ketone	Trichloro-ethylene	1,2-Dichloro-ethane	Trichloro-fluoro-methane (F-11)	Bromomethane	Dichlorodi-fluoromethane (F-12)	1,2-Dibro-moethane	1,1,1-Trichloro-ethane
MANUFACTURER ANALYSIS									
Theoretical PPB	(10.0)	(30.3)	(10.0)	(10.0)	(10.0)	(30.2)	(30.0)	(30.0)	(30.0)
1st Analysis Date	12/04/84	12/04/84	12/04/84	12/04/84	12/21/84	12/21/84	12/21/84	12/04/84	12/04/84
PPB	(10.2)	(30.2)	(10.0)	(9.10)	(10.7)	(29.8)	(31.5)	(35.0)	(32.8)
2nd Analysis Date	1/09/85	1/09/85	1/09/85	1/09/85	1/21/85	1/21/85	1/21/85	1/09/85	1/09/85
PPB	(9.60)	(30.0)	(9.20)	(9.10)	(10.1)	(28.9)	(31.9)	(35.1)	(32.2)
RTI ANALYSIS**									
1st Analysis Date	3/29/85	3/29/85	3/07/85	3/14/85	3/07/85	3/07/85	3/07/85	3/07/85	3/14/85
PPB	(10.6 ± 0.7)	(28.7 ± 1.6)	(9.90 ± 0.5)	(10.3 ± 0.5)	(10.1 ± 0.3)	(33.3 ± 1.3)	(32.2 ± 1.3)	(32.1 ± 1.3)	(30.4 ± 1.5)
2nd Analysis Day***	146	146	153	146	153	153	153	153	146
PPB	(10.4 ± 0.7)	(26.9 ± 1.5)	(9.80 ± 0.5)	(9.80 ± 0.5)	(10.6 ± 0.4)	(32.8 ± 1.3)	(31.4 ± 1.3)	(32.9 ± 1.3)	(29.3 ± 1.5)
3rd Analysis Day***	443	443	474	469	474	474	474	474	469
PPB	(11.3 ± 0.8)	(30.0 ± 1.6)	(10.2 ± 0.5)	(9.70 ± 0.5)	(10.1 ± 0.3)	(30.0 ± 1.2)	(26.3 ± 1.0)	(32.0 ± 1.3)	(31.7 ± 1.7)
4th Analysis Day***	851	851	851	851	851	851	851	851	851
PPB	NA	(29.7 ± 1.4)	NA	NA	(10.8 ± 0.9)	(34.3 ± 1.5)	NA	(32.5 ± 1.3)	NA

(Continued)

*Calibration was performed using permeation devices unless otherwise specified. An NBS primary standard was used for calibration for 4th analysis.
**Fourth analysis was performed using automated cryogenic preconcentration with cryofocusing followed by GC/FID.
***Number of days after 1st RTI analysis date.
****A different NBS primary standard was analyzed as internal Quality Control on each day of RTI analysis.

NC = This compound was not included in this cylinder.
NA = Not Analyzed.

STABILITY STUDY FOR GROUP II COMPOUNDS* (Continued)
CYLINDER II-A13

ACTIVITY	COMPOUND								
	Acetonitrile	Methyl Ethyl Ketone	Trichloro-ethylene	1,2-Dichloro-ethane	Trichloro-fluoro-methane (F-11)	Bromomethane	Dichlorodi-fluorometh-ane (F-12)	1,2-Dibro-moethane	1,1,1-Trichloro-ethane
RTI QUALITY CONTROL****									
1st Analysis Date	3/29/85	3/29/85	3/07/85	3/14/85	3/07/85	3/07/85	3/07/85	3/07/85	3/14/85
PPB	(14.1 ± 1.0)	(16.1 ± 0.9)	(10.9 ± 0.5)	(8.80 ± 0.6)	(10.7 ± 0.6)	(19.4 ± 0.8)	(8.20 ± 0.8)	(9.50 ± 0.4)	(11.4 ± 0.6)
NBS Concen. PPB	(12.1 ± 1.9)	(15.8 ± 2.0)	(11.6 ± 0.3)	(9.14 ± 0.6)	(11.3 ± 0.6)	(23.0 ± 0.6)	(9.41 ± 0.4)	(9.61 ± 0.3)	(11.9 ± 0.3)
2nd Analysis Day	146	146	153	146	153	153	153	153	146
PPB	(13.3 ± 0.9)	(17.0 ± 0.9)	(11.3 ± 0.5)	(8.60 ± 0.4)	(11.2 ± 0.4)	(18.9 ± 0.7)	(8.30 ± 0.3)	(9.10 ± 0.4)	(11.3 ± 0.6)
NBS Concen. PPB	(12.1 ± 1.9)	(15.8 ± 2.0)	(11.6 ± 0.3)	(9.14 ± 0.6)	(11.3 ± 0.6)	(23.0 ± 0.6)	(9.41 ± 0.4)	(9.61 ± 0.3)	(11.9 ± 0.3)
3rd Analysis Day	443	443	474	469	474	474	474	474	469
PPB	(13.6 ± 0.9)	(16.1 ± 0.8)	(11.5 ± 0.6)	(9.80 ± 0.5)	(10.7 ± 0.3)	(20.4 ± 0.8)	(10.6 ± 0.4)	(10.2 ± 0.4)	(11.7 ± 0.6)
NBS Concen. PPB	(12.1 ± 1.9)	(15.8 ± 2.0)	(11.6 ± 0.3)	(9.14 ± 0.6)	(11.3 ± 0.6)	(23.0 ± 0.6)	(9.41 ± 0.6)	(9.61 ± 0.3)	(11.9 ± 0.3)
4th Analysis Day	851	851	851	851	851	851	851	851	851
PPB	(13.1 ± 1.8)	(17.2 ± 0.8)	(11.8 ± 0.4)	(9.70 ± 0.3)	(11.8 ± 1.0)	(20.4 ± 0.9)	NA	(10.2 ± 0.4)	(12.0 ± 0.4)
NBS Concen. PPB	(12.1 ± 1.9)	(15.8 ± 2.0)	(11.6 ± 0.3)	(9.14 ± 0.6)	(11.3 ± 0.6)	(23.0 ± 0.6)	(9.41 ± 0.6)	(9.61 ± 0.3)	(11.9 ± 0.3)

*Calibration was performed using permeation devices unless otherwise specified. An NBS primary standard was used for calibration for 4th analysis.
**Fourth analysis was performed using automated cryogenic preconcentration with cryofocusing followed by GC/FID.
***Number of days after 1st RTI analysis date.
****A different NBS primary standard was analyzed as internal Quality Control on each day of RTI analysis.

NC = This compound was not included in this cylinder.
NA = Not Analyzed.

STABILITY STUDY FOR GROUP II COMPOUNDS*
CYLINDER II-A14

ACTIVITY		COMPOUND								
		Acetonitrile	Methyl Ethyl Ketone	Trichloro-ethylene	1,2-Dichloro-ethane	Trichloro-fluoro-methane (F-11)	Bromomethane	Dichlorodi-fluoromeths-ane (F-12)	1,2-Dibro-moethane	1,1,1-Trichloro-ethane
MANUFACTURER ANALYSIS										
Theoretical	PPB	(41.6)	(20.0)	(40.1)	(40.1)	(40.1)	(20.1)	(20.1)	(20.2)	(20.1)
1st Analysis	Date	12/05/84	12/05/84	12/05/84	12/05/84	12/26/84	12/26/84	12/26/84	12/05/84	12/05/84
	PPB	(47.7)	(17.7)	(35.9)	(33.0)	(27.4)	(19.8)	(19.3)	(21.3)	(19.9)
2nd Analysis	Date	1/11/85	1/11/85	1/11/85	1/11/85	1/23/85	1/23/85	1/23/85	1/11/85	1/11/85
	PPB	(43.9)	(16.7)	(35.0)	(33.4)	(33.7)	(19.2)	(20.8)	(22.2)	(19.9)
RTI ANALYSIS**										
1st Analysis	Date	3/27/85	3/27/85	3/05/85	3/13/85	3/05/85	3/05/85	3/05/85	3/05/85	3/13/85
	PPB	(37.3 ± 2.6)	(16.4 ± 0.9)	(37.9 ± 1.8)	(41.0 ± 2.1)	(36.8 ± 1.3)	(21.9 ± 0.9)	(21.8 ± 0.9)	(21.9 ± 0.9)	(19.8 ± 1.0)
2nd Analysis	Day***	148	148	156	148	156	156	156	156	148
	PPB	(38.1 ± 2.7)	(16.4 ± 0.9)	(38.0 ± 1.8)	(38.8 ± 2.0)	(38.6 ± 1.3)	(21.8 ± 0.8)	(20.6 ± 0.8)	(24.7 ± 1.0)	(18.2 ± 0.9)
3rd Analysis	Day***	445	445	476	470	476	476	476	476	470
	PPB	(38.4 ± 2.7)	(16.1 ± 0.8)	(39.4 ± 1.9)	(37.4 ± 1.9)	(40.8 ± 1.3)	(23.1 ± 0.9)	(20.3 ± 0.8)	(20.8 ± 0.9)	(19.1 ± 1.0)
4th Analysis	Day***	854	854	854	854	854	854	854	854	854
	PPB	(38.2 ± 5.2)	(16.6 ± 0.8)	(39.2 ± 1.3)	(39.8 ± 1.2)	(33.5 ± 2.9)	(24.1 ± 1.0)	NA	NA	(19.8 ± 0.6)

(Continued)

*Calibration was performed using permeation devices unless otherwise specified. An NBS primary standard was used for calibration for 4th analysis.
**Fourth analysis was performed using automated cryogenic preconcentration with cryofocusing followed by GC/FID.
***Number of days after 1st RTI analysis date.
****A different NBS primary standard was analyzed as internal Quality Control on each day of RTI analysis.

NC = This compound was not included in this cylinder.
NA = Not Analyzed.

STABILITY STUDY FOR GROUP II COMPOUNDS* (Continued)
CYLINDER II-A14

ACTIVITY	COMPOUND								
	Acetonitrile	Methyl Ethyl Ketone	Trichloro-ethylene	1,2-Dichloro-ethane	Trichloro-fluoro-methane (F-11)	Bromomethane	Dichlorodi-fluoromeths-ane (F-12)	1,2-Dibro-moethane	1,1,1-Trichloro-ethane
RTI QUALITY CONTROL****									
1st Analysis Date	3/7/85	3/7/85	3/7/85	3/05/85	3/05/85	3/05/85	3/05/85	3/05/85	3/13/85
PPB	(13.2 ± 0.9)	(16.8 ± 0.9)	(11.4 ± 0.5)	(9.50 ± 0.5)	(11.1 ± 0.4)	(21.0 ± 0.8)	(9.10 ± 0.4)	(10.0 ± 0.4)	(12.5 ± 0.6)
NBS Concen. PPB	(12.1 ± 1.9)	(15.8 ± 2.0)	(11.6 ± 0.3)	(9.14 ± 0.6)	(11.3 ± 0.6)	(23.0 ± 0.6)	(9.41 ± 0.4)	(9.61 ± 0.3)	(11.9 ± 0.3)
2nd Analysis Day	148	148	156	148	156	156	156	156	148
PPB	(13.3 ± 0.9)	(17.0 ± 0.9)	(11.2 ± 0.5)	(8.50 ± 0.4)	(11.2 ± 0.4)	(18.9 ± 0.7)	(8.50 ± 0.3)	(9.30 ± 0.4)	(11.3 ± 0.6)
NBS Concen. PPB	(12.1 ± 1.9)	(15.8 ± 2.0)	(11.6 ± 0.3)	(9.14 ± 0.6)	(11.3 ± 0.6)	(23.0 ± 0.6)	(9.41 ± 0.4)	(9.61 ± 0.3)	(11.9 ± 0.3)
3rd Analysis Day	445	445	476	470	476	476	476	476	470
PPB	(13.6 ± 0.9)	(16.1 ± 0.8)	(11.5 ± 0.6)	(9.80 ± 0.5)	(10.7 ± 0.3)	(20.4 ± 0.8)	(10.6 ± 0.4)	(10.2 ± 0.4)	(11.7 ± 0.6)
NBS Concen. PPB	(12.1 ± 1.9)	(15.8 ± 2.0)	(11.6 ± 0.3)	(9.14 ± 0.6)	(11.3 ± 0.6)	(23.0 ± 0.6)	(9.41 ± 0.6)	(9.61 ± 0.3)	(11.9 ± 0.3)
4th Analysis Day	854	854	854	854	854	854	854	854	854
PPB	(11.6 ± 1.6)	(16.4 ± 0.8)	(10.5 ± 0.3)	(8.60 ± 0.3)	(8.9 ± 0.8)	NA	NA	(9.45 ± 0.4)	(10.2 ± 0.3)
NBS Concen. PPB	(12.1 ± 1.9)	(15.8 ± 2.0)	(11.6 ± 0.3)	(9.14 ± 0.6)	(11.3 ± 0.6)	(23.0 ± 0.6)	(9.41 ± 0.6)	(9.61 ± 0.3)	(11.9 ± 0.3)

*Calibration was performed using permeation devices unless otherwise specified. An NBS primary standard was used for calibration for 4th analysis.
**Fourth analysis was performed using automated cryogenic preconcentration with cryofocusing followed by GC/FID.
***Number of days after 1st RTI analysis date.
****A different NBS primary standard was analyzed as internal Quality Control on each day of RTI analysis.

NC = This compound was not included in this cylinder.
NA = Not Analyzed.

STABILITY STUDY FOR GROUP II COMPOUNDS*
CYLINDER II-A15

ACTIVITY		COMPOUND								
		Acetonitrile	Methyl Ethyl Ketone	Trichloro-ethylene	1,2-Dichloro-ethane	Trichloro-fluoro-methane (F-11)	Bromomethane	Dichlorodi-fluorometh-ane (F-12)	1,2-Dibro-moethane	1,1,1-Trichloro-ethane
MANUFACTURER ANALYSIS										
Theoretical	PPB	(41.5)	(20.0)	(40.0)	(40.0)	(40.0)	(20.1)	(20.0)	(20.1)	(20.0)
1st Analysis	Date	12/07/84	12/07/84	12/07/84	12/07/84	12/27/84	12/27/84	12/27/84	12/07/84	12/07/84
	PPB	(45.1)	(18.8)	(36.6)	(33.2)	(35.1)	(19.7)	(22.2)	(22.4)	(19.9)
2nd Analysis	Date	1/14/85	1/14/85	1/14/85	1/14/85	1/23/85	1/23/85	1/23/85	1/14/85	1/14/85
	PPB	(43.9)	(18.4)	(38.4)	(34.4)	(33.8)	(19.2)	(16.1)	(23.1)	(20.3)
RTI ANALYSIS**										
1st Analysis	Date	3/27/85	3/27/85	3/05/85	3/13/85	3/05/85	3/05/85	3/05/85	3/05/85	3/13/85
	PPB	(36.3 ± 2.5)	(18.3 ± 1.0)	(38.4 ± 1.8)	(40.7 ± 2.1)	(36.6 ± 1.2)	(21.9 ± 0.9)	(21.9 ± 0.9)	(21.9 ± 0.9)	(20.1 ± 1.0)
2nd Analysis	Day***	148	148	156	148	156	156	156	156	148
	PPB	(37.6 ± 2.6)	(18.5 ± 1.0)	(38.4 ± 1.8)	(39.3 ± 2.0)	(38.5 ± 1.3)	(22.0 ± 0.9)	(20.8 ± 0.9)	(21.7 ± 0.9)	(18.2 ± 0.9)
3rd Analysis	Day***	445	445	476	470	476	476	476	476	470
	PPB	(37.3 ± 2.6)	(17.7 ± 0.9)	(41.9 ± 2.1)	(38.0 ± 2.0)	(42.0 ± 1.3)	(25.4 ± 1.0)	(21.0 ± 0.8)	(22.2 ± 0.9)	(21.2 ± 1.1)
4th Analysis	Day***	851	851	851	851	851	851	851	851	851
	PPB	(35.7 ± 4.8)	(18.0 ± 0.9)	(41.1 ± 1.3)	(40.7 ± 1.3)	(39.4 ± 3.4)	(24.5 ± 1.0)	NA	(22.7 ± 0.9)	(20.3 ± 0.6)

(Continued)

*Calibration was performed using permeation devices unless otherwise specified. An NBS primary standard was used for calibration for 4th analysis.
**Fourth analysis was performed using automated cryogenic preconcentration with cryofocusing followed by GC/FID.
***Number of days after 1st RTI analysis date.
****A different NBS primary standard was analyzed as internal Quality Control on each day of RTI analysis.

NC = This compound was not included in this cylinder.
NA = Not Analyzed.

STABILITY STUDY FOR GROUP II COMPOUNDS* (Continued)
CYLINDER II-A15

ACTIVITY		COMPOUND								
		Acetonitrile	Methyl Ethyl Ketone	Trichloro-ethylene	1,2-Dichloro-ethane	Trichloro-fluoro-methane (F-11)	Bromomethane	Dichlorodi-fluorometh-ane (F-12)	1,2-Dibro-moethane	1,1,1-Trichloro-ethane
RTI QUALITY CONTROL****										
1st Analysis	Date	3/27/85	3/27/85	3/05/85	3/13/85	3/05/85	3/05/85	3/05/85	3/05/85	3/13/85
	PPB	(13.2 ± 0.9)	(16.8 ± 0.9)	(11.4 ± 0.5)	(9.50 ± 0.5)	(11.1 ± 0.4)	(21.0 ± 0.8)	(9.10 ± 0.4)	(10.0 ± 0.4)	(12.5 ± 0.6)
NBS Concen.	PPB	(12.1 ± 1.9)	(15.8 ± 2.0)	(11.6 ± 0.3)	(9.14 ± 0.6)	(11.3 ± 0.6)	(23.0 ± 0.6)	(9.41 ± 0.4)	(9.61 ± 0.3)	(11.9 ± 0.3)
2nd Analysis	Day	148	148	156	148	156	156	156	156	148
	PPB	(13.3 ± 0.9)	(17.0 ± 0.9)	(11.2 ± 0.5)	(8.50 ± 0.4)	(11.2 ± 0.4)	(18.9 ± 0.7)	(8.50 ± 0.3)	(9.30 ± 0.4)	(11.3 ± 0.6)
NBS Concen.	PPB	(12.1 ± 1.9)	(15.8 ± 2.0)	(11.6 ± 0.3)	(9.14 ± 0.6)	(11.3 ± 0.6)	(23.0 ± 0.6)	(9.41 ± 0.4)	(9.61 ± 0.3)	(11.9 ± 0.3)
3rd Analysis	Day	445	445	476	470	476	476	476	476	470
	PPB	(13.6 ± 0.9)	(16.1 ± 0.8)	(11.5 ± 0.6)	(9.80 ± 0.5)	(10.7 ± 0.3)	(20.4 ± 0.8)	(10.6 ± 0.4)	(10.2 ± 0.4)	(11.7 ± 0.6)
NBS Concen.	PPB	(12.1 ± 1.9)	(15.8 ± 2.0)	(11.6 ± 0.3)	(9.14 ± 0.6)	(11.3 ± 0.6)	(23.0 ± 0.6)	(9.41 ± 0.6)	(9.61 ± 0.3)	(11.9 ± 0.3)
4th Analysis	Day	851	851	851	851	851	851	851	851	851
	PPB	(13.2 ± 1.8)	(17.2 ± 0.8)	(11.8 ± 0.4)	(9.40 ± 0.3)	(11.4 ± 1.0)	(18.4 ± 0.8)	NA	(10.2 ± 0.4)	(12.0 ± 0.4)
NBS Concen.	PPB	(12.1 ± 1.9)	(15.8 ± 2.0)	(11.6 ± 0.3)	(9.14 ± 0.6)	(11.3 ± 0.6)	(23.0 ± 0.6)	(9.41 ± 0.6)	(9.61 ± 0.3)	(11.9 ± 0.3)

*Calibration was performed using permeation devices unless otherwise specified. An NBS primary standard was used for calibration for 4th analysis.
**Fourth analysis was performed using automated cryogenic preconcentration with cryofocusing followed by GC/FID.
***Number of days after 1st RTI analysis date.
****A different NBS primary standard was analyzed as internal Quality Control on each day of RTI analysis.

NC = This compound was not included in this cylinder.
NA = Not Analyzed.

STABILITY STUDY FOR GROUP II COMPOUNDS*
CYLINDER II-A16

ACTIVITY		COMPOUND								
		Acetonitrile	Methyl Ethyl Ketone	Trichloro-ethylene	1,2-Dichloro-ethane	Trichloro-fluoro-methane (F-11)	Bromomethane	Dichlorodi-fluoromeths-ane (F-12)	1,2-Dibro-moethane	1,1,1-Trichloro-ethane
MANUFACTURER ANALYSIS										
Theoretical	PPB	(150)	(150)	(150)	(150)	(150)	(150)	(150)	(150)	(150)
1st Analysis	Date	5/09/86	5/09/86	5/09/86	5/09/86	5/09/86	5/09/86	5/09/86	5/09/86	5/09/86
	PPB	(87.0)	(134)	(137)	(128)	(153)	(139)	(147)	(153)	(144)
RTI ANALYSIS**										
1st Analysis	Date	6/17/86	6/17/86	7/01/86	7/01/86	7/01/86	7/01/86	7/01/86	7/01/86	7/01/86
	PPB	(154 ± 11)	(167 ± 8.8)	(148 ± 7.2)	(155 ± 8.0)	(155 ± 4.8)	(184 ± 7.4)	(161 ± 6.2)	(158 ± 6.6)	(152 ± 8.0)
2nd Analysis	Day***	408	408	408	408	408	408	408	408	408
	PPB	(146 ± 19.7)	(144 ± 6.9)	(158 ± 4.7)	(150 ± 4.7)	(152 ± 13.0)	NA	NA	(159 ± 6.4)	(149 ± 4.5)
RTI QUALITY CONTROL**										
1st Analysis	Date	6/17/86	6/17/86	7/01/86	7/01/86	7/01/86	7/01/86	7/01/86	7/01/86	7/01/86
	PPB	(13.6 ± 0.9)	(16.1 ± 0.8)	(120 ± 6.0)	(126 ± 7.0)	(157 ± 5.0)	(181 ± 7.0)	(116 ± 5.0)	(159 ± 7.0)	(154 ± 8.0)
NBS Concen.	PPB	(12.1 ± 1.9)	(15.8 ± 2.0)	(118 ± 1.0)	(123 ± 2.0)	(151 ± 5.0)	(193 ± 3.0)	(116 ± 4.0)	(150 ± 2.0)	(147 ± 3.0)
2nd Analysis	Day	408	408	408	408	408	408	408	408	408
	PPB	(12.8 ± 1.7)	(17.4 ± 0.8)	(11.6 ± 0.4)	(9.30 ± 0.3)	(12.5 ± 1.1)	(25.1 ± 1.1)	NA	(9.80 ± 0.4)	(11.9 ± 0.3)
NBS Concen.	PPB	(12.1 ± 1.9)	(15.8 ± 2.0)	(11.6 ± 0.3)	(9.14 ± 0.6)	(11.3 ± 0.6)	(23.0 ± 0.6)	(9.41 ± 0.4)	(9.61 ± 0.3)	(11.9 ± 0.3)

*Calibration was performed using permeation devices unless otherwise specified. An NBS primary standard was used for calibration for 2nd analysis.
**NBS primary standard was analyzed as internal Quality Control on each day of RTI analysis.
***Number of days after 1st RTI analysis date.
****First RTI analysis was performed using direct injection. Second RTI analysis was performed using automated cryogenic preconcentration with cryofocusing followed by GC/FID.

NA = Not Analyzed.

STABILITY STUDY FOR GROUP II COMPOUNDS*
CYLINDER II-A17

ACTIVITY		COMPOUND								
		Acetonitrile	Methyl Ethyl Ketone	Trichloro-ethylene	1,2-Dichloro-ethane	Trichloro-fluoro-methane (F-11)	Bromomethane	Dichlorodi-fluoromeths-ane (F-12)	1,2-Dibro-moethane	1,1,1-Trichloro-ethane
MANUFACTURER ANALYSIS										
Theoretical	PPB	(150)	(150)	(150)	(150)	(150)	(150)	(150)	(150)	(150)
1st Analysis	Date	5/09/86	5/09/86	5/09/86	5/09/86	5/09/86	5/09/86	5/09/86	5/09/86	5/09/86
	PPB	(51.4)	(106)	(135)	(127)	(158)	(136)	(142)	(152)	(138)
RTI ANALYSIS****										
1st Analysis	Date	6/17/86	6/17/86	7/01/86	7/01/86	7/01/86	7/01/86	7/01/86	7/01/86	7/01/86
	PPB	(47.1 ± 3.3)	(112 ± 5.9)	(148 ± 7.3)	(154 ± 8.0)	(156 ± 4.9)	(163 ± 6.5)	(160 ± 6.2)	(163 ± 6.7)	(152 ± 8.0)
2nd Analysis	Day***	408	408	408	408	408	408	408	408	408
	PPB	NA	NA	(153 ± 4.8)	(143 ± 4.5)	(156 ± 13.4)	NA	NA	(154 ± 6.1)	(140 ± 4.2)
RTI QUALITY CONTROL**										
1st Analysis	Date	6/17/86	6/17/86	7/01/86	7/01/86	7/01/86	7/01/86	7/01/86	7/01/86	7/01/86
	PPB	(13.6 ± 0.9)	(16.1 ± 0.8)	(120 ± 6.0)	(126 ± 7.0)	(157 ± 5.0)	(181 ± 7.0)	(116 ± 5.0)	(159 ± 7.0)	(154 ± 8.0)
NBS Concen.	PPB	(12.1 ± 1.9)	(15.8 ± 2.0)	(118 ± 1.0)	(123 ± 2.0)	(151 ± 5.0)	(193 ± 3.0)	(116 ± 4.0)	(150 ± 2.0)	(147 ± 3.0)
2nd Analysis	Day	408	408	408	408	408	408	408	408	408
	PPB	(12.8 ± 1.7)	(17.4 ± 0.8)	(11.6 ± 0.4)	(9.30 ± 0.3)	(12.5 ± 1.1)	(25.1 ± 1.1)	NA	(9.80 ± 0.4)	(11.1 ± 0.3)
NBS Concen.	PPB	(12.1 ± 1.9)	(15.8 ± 2.0)	(11.6 ± 0.3)	(9.14 ± 0.6)	(11.3 ± 0.6)	(23.0 ± 0.6)	(9.41 ± 0.4)	(9.61 ± 0.3)	(11.9 ± 0.3)

*Calibration was performed using permeation devices unless otherwise specified. An NBS primary standard was used for calibration for 2nd analysis.
**NBS primary standard was analyzed as internal Quality Control on each day of RTI analysis.
***Number of days after 1st RTI analysis date.
****First RTI analysis was performed using direct injection. Second RTI analysis was performed using automated cryogenic preconcentration with cryofocusing followed by GC/FID.

NA = Not Analyzed.

STABILITY STUDY FOR GROUP II COMPOUNDS*
CYLINDER II-A18

ACTIVITY	COMPOUND								
	Acetonitrile	Methyl Ethyl Ketone	Trichloro-ethylene	1,2-Dichloro-ethane	Trichloro-fluoro-methane (F-11)	Bromomethane	Dichlorodi-fluoromethane (F-12)	1,2-Dibro-moethane	1,1,1-Trichloro-ethane
MANUFACTURER ANALYSIS									
Theoretical PPB	(150)	(150)	(150)	(150)	(150)	(150)	(150)	(150)	(150)
1st Analysis Date	5/09/86	5/09/86	5/09/86	5/09/86	5/09/86	5/09/86	5/09/86	5/09/86	5/09/86
PPB	(82.4)	(132)	(137)	(128)	(145)	(138)	(146)	(154)	(146)
RTI ANALYSIS**									
1st Analysis Date	6/17/86	6/17/86	7/01/86	7/01/86	7/01/86	7/01/86	7/01/86	7/01/86	7/01/86
PPB	(140 ± 9.7)	(159 ± 8.4)	(148 ± 7.3)	(154 ± 7.9)	(153 ± 4.8)	(186 ± 7.4)	(161 ± 6.2)	(163 ± 6.7)	(151 ± 8.0)
2nd Analysis Day***	408	408	408	408	408	408	408	408	408
PPB	(135 ± 18.3)	(147 ± 7.1)	NA	(145 ± 4.6)	NA	NA	NA	NA	(150 ± 4.5)
RTI QUALITY CONTROL**									
1st Analysis Date	6/17/86	6/17/86	7/01/86	7/01/86	7/01/86	7/01/86	7/01/86	7/01/86	7/01/86
PPB	(13.6 ± 0.9)	(16.1 ± 0.8)	(120 ± 6.0)	(126 ± 7.0)	(157 ± 5.0)	(181 ± 7.0)	(116 ± 5.0)	(159 ± 7.0)	(154 ± 8.0)
NBS Concen. PPB	(12.1 ± 1.9)	(15.8 ± 2.0)	(118 ± 1.0)	(123 ± 2.0)	(151 ± 5.0)	(193 ± 3.0)	(116 ± 4.0)	(150 ± 2.0)	(147 ± 3.0)
2nd Analysis Day	408	408	408	408	408	408	408	408	408
PPB	(12.8 ± 1.7)	(17.4 ± 0.8)	(11.6 ± 0.4)	(9.30 ± 0.3)	(12.5 ± 1.1)	(25.1 ± 1.1)	NA	(9.80 ± 0.4)	(11.2 ± 0.3)
NBS Concen. PPB	(12.1 ± 1.9)	(15.8 ± 2.0)	(11.6 ± 0.3)	(9.14 ± 0.6)	(11.3 ± 0.6)	(23.0 ± 0.6)	(9.41 ± 0.4)	(9.61 ± 0.3)	(11.9 ± 0.3)

*Calibration was performed using permeation devices unless otherwise specified. An NBS primary standard was used for calibration for 2nd analysis.
**NBS primary standard was analyzed as internal Quality Control on each day of RTI analysis.
***Number of days after 1st RTI analysis date.
****First RTI analysis was performed using direct injection. Second RTI analysis was performed using automated cryogenic preconcentration with cryofocusing followed by GC/FID.

NA = Not Analyzed.

STABILITY STUDY FOR GROUP III COMPOUNDS*
Cylinder III-A1

ACTIVITY		COMPOUND						
		Freon 114	Freon 113	Vinylidiene Chloride	Acetone	1,4-Dioxane	Toluene	Chloro-benzene
MANUFACTURER ANALYSIS								
Theoretical	PPB	(30.0)	(30.0)	(30.1)	(10.0)	(10.0)	(10.1)	(10.1)
1st Analysis	Date	4-24-85	4-24-85	4-24-85	4-24-85	4-24-85	4-24-85	4-24-85
	PPB	(27.2)	(27.9)	(26.9)	(10.0)	(9.00)	(8.60)	(9.50)
2nd Analysis	Date	6-1-85	6-1-85	6-1-85	6-1-85	6-1-85	6-1-85	6-1-85
	PPB	(28.3)	(27.8)	(28.8)	(9.00)	(9.00)	(9.00)	(8.00)
RTI ANALYSIS**								
1st Analysis	Date	3-27-86	3-27-86	3-27-86	3-27-86	3-27-86	3-27-86	3-27-86
	PPB	(24.0 ± 3.4)	(30.2 ± 3.0)	(29.5 ± 3.0)	(10.0 ± 3.0)	(8.00 ± 4.0)	(9.80 ± 1.1)	(10.8 ± 1.3)
2nd Analysis	Day**	52	52	52	52	52	52	52
	PPB	(21.9 ± 3.1)	(29.2 ± 2.9)	(31.2 ± 3.2)	(11.0 ± 3.0)	(9.00 ± 5.0)	(10.1 ± 1.1)	(10.6 ± 1.3)
3rd Analysis	Day**	150	150	150	150	150	150	150
	PPB	(24.6 ± 4.6)	(30.2 ± 3.9)	(30.7 ± 4.2)	(8.60 ± 2.6)	(10.0 ± 3.2)	(12.3 ± 0.8)	(10.7 ± 1.8)
4th Analysis	Day**	385	385	385	385	385	385	385
	PPB	(21.8 ± 3.9)	(28.9 ± 3.8)	(33.3 ± 4.7)	(9.20 ± 2.4)	(11.4 ± 3.6)	(11.6 ± 0.7)	(11.7 ± 1.9)

(Continued)

STABILITY STUDY FOR GROUP III COMPOUNDS* (Continued)
Cylinder III-A1

ACTIVITY	COMPOUND						
	Freon 114	Freon 113	Vinylidiene Chloride	Acetone	1,4-Dioxane	Toluene	Chloro-benzene
RTI QUALITY CONTROL***							
1st Analysis Date	3-27-86	3-27-86	3-27-86	3-27-86	3-27-86	3-27-86	3-27-86
PPB	(11.6 ± 1.7)	(20.1 ± 1.8)	(8.30 ± 0.9)	(12.0 ± 3.0)	(13.0 ± 8.0)	(15.7 ± 1.6)	(7.90 ± 1.1)
NBS Concen. PPB	(10.6 ± 1.0)	(20.2 ± 1.2)	(9.20 ± 0.5)	(14.0 ± 3.0)	(15.0 ± 6.0)	(13.2 ± 1.1)	(8.10 ± 0.5)
2nd Analysis Day	52	52	52	52	52	52	52
PPB	(15.0 ± 2.1)	(15.8 ± 1.6)	(21.5 ± 2.2)	(47.0 ± 14)	(42.0 ± 21)	(10.3 ± 1.2)	(11.4 ± 1.4)
NBS Concen. PPB	(18.1 ± 1.8)	(15.7 ± 0.9)	(20.8 ± 1.1)	(47.0 ± 8.0)	(42.0 ± 17)	(10.8 ± 0.9)	(11.2 ± 0.7)
3rd Analysis Day	150	150	150	150	150	150	150
PPB	(8.70 ± 1.6)	(14.8 ± 1.9)	(16.3 ± 2.2)	(13.0 ± 4.0)	(20.5 ± 6.7)	(10.0 ± 0.7)	(11.9 ± 2.0)
NBS Concen. PPB	(10.8 ± 1.4)	(15.4 ± 1.0)	(16.0 ± 1.0)	(13.8 ± 2.2)	(15.9 ± 3.0)	(9.90 ± 0.6)	(12.3 ± 0.7)
4th Analysis Day	385	385	385	385	385	385	385
PPB	(9.60 ± 1.1)	(20.9 ± 1.2)	(9.70 ± 0.5)	(11.4 ± 2.4)	(14.3 ± 1.1)	(13.4 ± 1.1)	(7.80 ± 0.4)
NBS Concen. PPB	(10.6 ± 1.0)	(20.2 ± 1.2)	(9.20 ± 0.5)	(14.0 ± 3.0)	(15.0 ± 6.0)	(13.2 ± 1.1)	(8.10 ± 0.4)

* Calibration was performed using NBS primary standard.
** Number of days after 1st RTI analysis date.
*** A different NBS primary standard was analyzed as an internal quality control on each day of RTI analysis
**** All RTI analyses were performed using cryogenic preconcentration followed by GC/FID.

STABILITY STUDY FOR GROUP III COMPOUNDS*
Cylinder III-A2

ACTIVITY	COMPOUND						
	Freon 114	Freon 113	Vinylidiene Chloride	Acetone	1,4-Dioxane	Toluene	Chloro-benzene
MANUFACTURER ANALYSIS							
Theoretical PPB	(10.0)	(10.0)	(10.2)	(32.0)	(30.0)	(30.0)	(30.0)
1st Analysis Date	4-22-85	4-22-85	4-22-85	4-22-85	4-22-85	4-22-85	4-22-85
PPB	(9.00)	(10.5)	(10.7)	(21.0)	(33.0)	(27.0)	(30.2)
2nd Analysis Date	6-3-85	6-3-85	6-3-85	6-3-85	6-3-85	6-3-85	6-3-85
PPB	(8.40)	(8.90)	(10.7)	(19.0)	(29.0)	(27.4)	(30.6)
RTI ANALYSIS**							
1st Analysis Date	3-9-86	3-9-86	3-9-86	3-9-86	3-9-86	3-9-86	3-9-86
PPB	(8.40 ± 1.2)	(9.30 ± 1.0)	(9.50 ± 1.0)	(24.0 ± 6.0)	(29.0 ± 16)	(27.5 ± 3.2)	(30.4 ± 3.5)
2nd Analysis Day**	70	70	70	70	70	70	70
PPB	(7.80 ± 1.1)	(9.30 ± 0.9)	(9.70 ± 1.0)	(27.0 ± 8.0)	(28.0 ± 14)	(28.3 ± 3.2)	(29.1 ± 3.5)
3rd Analysis Day**	150	150	150	150	150	150	150
PPB	(7.60 ± 1.4)	(9.60 ± 1.2)	(10.6 ± 1.5)	(25.3 ± 7.9)	(32.2 ± 11)	(32.8 ± 2.3)	(28.3 ± 4.8)
4th Analysis Day**	385	385	385	385	385	385	385
PPB	(6.80 ± 1.2)	(10.5 ± 1.3)	(10.8 ± 1.5)	(24.8 ± 7.7)	(26.0 ± 8.0)	(28.0 ± 2.0)	(28.5 ± 4.6)

(Continued)

STABILITY STUDY FOR GROUP III COMPOUNDS* (Continued)
Cylinder III-A2

ACTIVITY	COMPOUND						
	Freon 114	Freon 113	Vinylidiene Chloride	Acetone	1,4-Dioxane	Toluene	Chloro-benzene
	RTI QUALITY CONTROL***						
1st Analysis Date	3-9-86	3-9-86	3-9-86	3-9-86	3-9-86	3-9-86	3-9-86
PPB	(11.9 ± 1.7)	(20.4 ± 1.8)	(8.80 ± 0.9)	(11.0 ± 3.0)	(14.0 ± 8.0)	(13.5 ± 1.6)	(8.10 ± 1.1)
NBS Concen. PPB	(10.6 ± 1.0)	(20.2 ± 1.2)	(9.20 ± 0.5)	(14.0 ± 3.0)	(15.0 ± 6.0)	(13.2 ± 1.2)	(8.10 ± 0.5)
2nd Analysis Day	70	70	70	70	70	70	70
PPB	(15.0 ± 2.1)	(15.8 ± 1.6)	(21.5 ± 2.2)	(47.0 ± 14)	(42.0 ± 21)	(10.3 ± 1.2)	(11.4 ± 1.4)
NBS Concen. PPB	(18.1 ± 1.8)	(15.7 ± 0.9)	(20.8 ± 1.1)	(47.0 ± 8.0)	(42.0 ± 17)	(10.8 ± 0.9)	(11.2 ± 0.7)
3rd Analysis Day	150	150	150	150	150	150	150
PPB	(8.70 ± 1.6)	(14.8 ± 1.9)	(16.3 ± 2.2)	(13.0 ± 4.0)	(20.5 ± 6.7)	(10.0 ± 0.7)	(11.8 ± 2.0)
NBS Concen. PPB	(10.8 ± 1.4)	(15.4 ± 1.0)	(16.0 ± 1.0)	(13.8 ± 2.2)	(15.9 ± 3.0)	(9.90 ± 0.6)	(12.3 ± 0.7)
4th Analysis Day	385	385	385	385	385	385	385
PPB	(9.60 ± 1.1)	(20.9 ± 1.2)	(9.70 ± 0.5)	(11.4 ± 2.4)	(14.3 ± 5.7)	(13.4 ± 1.1)	(7.80 ± 0.4)
NBS Concen. PPB	(10.6 ± 1.0)	(20.2 ± 1.2)	(9.20 ± 0.5)	(14.0 ± 3.0)	(15.0 ± 6.0)	(13.2 ± 1.1)	(8.10 ± 0.4)

* Calibration was performed using NBS primary standard.
** Number of days after 1st RTI analysis date.
*** A different NBS primary standard was analyzed as an internal quality control on each day of RTI analysis.
**** All RTI analyses were performed using cryogenic preconcentration followed by GC/FID.

STABILITY STUDY FOR GROUP III COMPOUNDS*
Cylinder III-A3

ACTIVITY	COMPOUND						
	Freon 114	Freon 113	Vinylidiene Chloride	Acetone	1,4-Dioxane	Toluene	Chloro-benzene
MANUFACTURER ANALYSIS							
Theoretical PPB	(29.9)	(10.0)	(30.8)	(10.0)	(30.0)	(10.2)	(30.0)
1st Analysis Date	7-24-85	7-24-85	7-24-85	7-24-85	7-24-85	7-24-85	7-24-85
PPB	(28.3)	(8.50)	(29.4)	(8.00)	(28.0)	(8.80)	(31.0)
2nd Analysis Date	8-28-85	8-28-85	8-28-85	8-28-85	8-28-85	8-28-85	8-28-85
PPB	(27.7)	(9.10)	(29.5)	(7.00)	(25.0)	(8.60)	(30.7)
RTI ANALYSIS**							
1st Analysis Date	3-27-86	3-27-86	3-27-86	3-27-86	3-27-86	3-27-86	3-27-86
PPB	(24.5 ± 3.5)	(9.40 ± 1.0)	(30.6 ± 3.1)	(10.0 ± 3.0)	(27.0 ± 15)	(10.0 ± 1.1)	(31.4 ± 3.6)
2nd Analysis Day**	52	52	52	52	52	52	52
PPB	(22.8 ± 3.2)	(10.5 ± 1.0)	(32.0 ± 3.2)	(9.00 ± 3.0)	(26.0 ± 13)	(9.90 ± 1.1)	(29.5 ± 3.6)
3rd Analysis Day**	150	150	150	150	150	150	150
PPB	(27.6 ± 5.2)	(10.3 ± 1.3)	(32.4 ± 4.5)	(7.10 ± 2.2)	(33.5 ± 11)	(10.4 ± 0.7)	(29.6 ± 5.0)
4th Analysis Day**	385	385	385	385	385	385	385
PPB	(23.5 ± 4.1)	(11.0 ± 1.3)	(35.2 ± 4.9)	(9.00 ± 2.7)	(26.0 ± 8.0)	(11.1 ± 0.8)	(29.0 ± 4.6)

(Continued)

STABILITY STUDY FOR GROUP III COMPOUNDS* (Continued)
Cylinder III-A3

ACTIVITY	COMPOUND						
	Freon 114	Freon 113	Vinylidiene Chloride	Acetone	1,4-Dioxane	Toluene	Chlorobenzene
RTI QUALITY CONTROL***							
1st Analysis Date	3-27-86	3-27-86	3-27-86	3-27-86	3-27-86	3-27-86	3-27-86
PPB	(11.6 ± 1.7)	(20.1 ± 1.8)	(8.30 ± 0.9)	(12.0 ± 3.0)	(16.0 ± 8.0)	(12.7 ± 1.6)	(7.90 ± 1.1)
NBS Concen. PPB	(10.6 ± 1.0)	(20.2 ± 1.2)	(9.20 ± 0.5)	(14.0 ± 3.0)	(15.0 ± 6.0)	(13.2 ± 1.1)	(8.10 ± 0.5)
2nd Analysis Day	52	52	52	52	52	52	52
PPB	(15.0 ± 2.1)	(15.8 ± 1.6)	(21.5 ± 2.2)	(47.0 ± 14)	(42.0 ± 21)	(10.3 ± 1.2)	(11.4 ± 1.4)
NBS Concen. PPB	(18.1 ± 1.8)	(15.7 ± 0.9)	(20.8 ± 1.1)	(47.0 ± 8.0)	(42.0 ± 17)	(10.8 ± 0.9)	(11.2 ± 0.7)
3rd Analysis Day	150	150	150	150	150	150	150
PPB	(8.70 ± 1.6)	(14.8 ± 1.9)	(16.3 ± 2.2)	(13.0 ± 4.0)	(20.5 ± 6.7)	(10.0 ± 0.7)	(11.8 ± 2.0)
NBS Concen. PPB	(10.8 ± 1.4)	(15.4 ± 1.0)	(16.0 ± 1.0)	(13.8 ± 2.2)	(15.9 ± 3.0)	(9.90 ± 0.6)	(12.3 ± 0.7)
4th Analysis Day	385	385	385	385	385	385	385
PPB	(9.60 ± 1.1)	(20.9 ± 1.2)	(9.70 ± 0.5)	(11.4 ± 2.4)	(14.3 ± 5.7)	(13.4 ± 1.1)	(7.80 ± 0.4)
NBS Concen. PPB	(10.6 ± 1.0)	(20.2 ± 1.2)	(9.20 ± 0.5)	(14.0 ± 3.0)	(15.0 ± 6.0)	(13.2 ± 1.1)	(8.10 ± 0.4)

* Calibration was performed using NBS primary standard.
** Number of days after 1st RTI analysis date.
*** A different NBS primary standard was analyzed as an internal quality control on each day of RTI analysis.
**** All RTI analyses were performed using cryogenic preconcentration followed by GC/FID.

STABILITY STUDY FOR GROUP III COMPOUNDS*
Cylinder III-A4

ACTIVITY		COMPOUND						
		Freon 114	Freon 113	Vinylidiene Chloride	Acetone	1,4-Dioxane	Toluene	Chloro-benzene
MANUFACTURER ANALYSIS								
Theoretical	PPB	(10.0)	(10.1)	(10.3)	(33.0)	(30.0)	(30.3)	(3.03)
1st Analysis	Date	4-15-85	4-15-85	4-15-85	4-15-85	4-15-85	4-15-85	4-15-85
	PPB	(9.90)	(10.2)	(10.2)	(23.0)	(33.0)	(29.7)	(32.8)
2nd Analysis	Date	6-3-85	6-3-85	6-3-85	6-3-85	6-3-85	6-3-85	6-3-85
	PPB	(9.40)	(9.70)	(11.8)	(22.0)	(29.0)	(29.5)	(33.1)
RTI ANALYSIS**								
1st Analysis	Date	3-9-86	3-9-86	3-9-86	3-9-86	3-9-86	3-9-86	3-9-86
	PPB	(9.20 ± 1.4)	(10.2 ± 1.4)	(10.4 ± 1.0)	(25.0 ± 6.0)	(30.0 ± 17)	(29.0 ± 3.4)	(32.1 ± 3.7)
2nd Analysis	Day**	70	70	70	70	70	70	70
	PPB	(8.50 ± 1.2)	(10.1 ± 1.0)	(10.9 ± 1.1)	(28.0 ± 8.0)	(29.0 ± 15)	(30.8 ± 3.5)	(31.4 ± 3.8)
3rd Analysis	Day**	150	150	150	150	150	150	150
	PPB	(7.60 ± 1.4)	(10.3 ± 1.3)	(11.7 ± 1.6)	(24.7 ± 7.7)	(33.7 ± 11)	(33.5 ± 2.3)	(30.8 ± 5.2)
4th Analysis	Day**	385	385	385	385	385	385	385
	PPB	(7.20 ± 1.3)	(11.3 ± 1.4)	(12.8 ± 1.8)	(30.4 ± 9.4)	(31.8 ± 10)	(31.4 ± 2.2)	(30.2 ± 4.8)

(Continued)

STABILITY STUDY FOR GROUP III COMPOUNDS* (Continued)
Cylinder III-A4

ACTIVITY	COMPOUND						
	Freon 114	Freon 113	Vinylidiene Chloride	Acetone	1,4-Dioxane	Toluene	Chlorobenzene
	RTI QUALITY CONTROL***						
1st Analysis Date	3-9-86	3-9-86	3-8-86	3-9-86	3-9-86	3-9-86	3-9-86
PPB	(11.9 ± 1.7)	(20.4 ± 1.8)	(8.80 ± 0.9)	(11.0 ± 3.0)	(14.0 ± 8.0)	(13.5 ± 1.6)	(8.10 ± 1.1)
NBS Concen. PPB	(10.6 ± 1.0)	(20.2 ± 1.2)	(9.20 ± 0.5)	(14.0 ± 3.0)	(15.0 ± 6.0)	(13.2 ± 1.2)	(8.10 ± 0.5)
2nd Analysis Day	70	70	70	70	70	70	70
PPB	(15.0 ± 2.1)	(15.8 ± 1.6)	(21.5 ± 2.2)	(47.0 ± 14)	(42.0 ± 21)	(10.3 ± 1.2)	(11.4 ± 1.4)
NBS Concen. PPB	(18.1 ± 1.8)	(15.7 ± 0.9)	(20.8 ± 1.1)	(47.0 ± 8.0)	(42.0 ± 17)	(10.8 ± 0.9)	(11.2 ± 0.7)
3rd Analysis Day	150	150	150	150	150	150	150
PPB	(8.70 ± 1.6)	(14.8 ± 1.9)	(16.3 ± 2.2)	(13.0 ± 4.0)	(20.5 ± 6.7)	(10.0 ± 0.7)	(11.8 ± 2.0)
NBS Concen. PPB	(10.8 ± 1.4)	(15.4 ± 1.0)	(16.0 ± 1.0)	(13.8 ± 2.2)	(15.9 ± 3.0)	(9.90 ± 0.6)	(12.3 ± 0.7)
4th Analysis Day	385	385	385	385	385	385	385
PPB	(9.60 ± 1.1)	(20.9 ± 1.2)	(9.70 ± 0.5)	(11.4 ± 2.4)	(14.3 ± 5.7)	(13.4 ± 1.1)	(7.80 ± 0.4)
NBS Concen. PPB	(10.6 ± 1.0)	(20.2 ± 1.2)	(9.20 ± 0.5)	(14.0 ± 3.0)	(15.0 ± 6.0)	(13.2 ± 1.1)	(8.10 ± 0.4)

* Calibration was performed using NBS primary standard.
** Number of days after 1st RTI analysis date.
*** A different NBS primary standard was analyzed as an internal quality control on each day of RTI analysis.
**** All RTI analyses were performed using cryogenic preconcentration followed by GC/FID.

STABILITY STUDY FOR GROUP III COMPOUNDS*
Cylinder III-A5

ACTIVITY	COMPOUND						
	Freon 114	Freon 113	Vinylidiene Chloride	Acetone	1,4-Dioxane	Toluene	Chloro-benzene
MANUFACTURER ANALYSIS							
Theoretical PPB	(10.1)	(10.2)	(10.1)	(10.0)	(10.1)	(10.1)	(10.1)
1st Analysis Date	4-12-85	4-12-85	4-12-85	4-12-85	4-12-85	4-12-85	4-12-85
PPB	(9.30)	(10.0)	(8.70)	(9.40)	(9.00)	(9.00)	(9.70)
2nd Analysis Date	5-29-85	5-29-85	5-29-85	5-29-85	5-29-85	5-29-85	5-29-85
PPB	(9.60)	(9.80)	(9.30)	(9.30)	(8.60)	(9.20)	(8.90)
RTI ANALYSIS****							
1st Analysis Date	on audit	on audit	on audit	on audit	on audit	on audit	on audit
PPB							
2nd Analysis Day**	on audit	on audit	on audit	on audit	on audit	on audit	on audit
PPB							
3rd Analysis Day**	151	151	151	151	151	151	151
PPB	(7.20 ± 1.4)	(10.2 ± 1.3)	(12.5 ± 1.7)	(6.70 ± 2.1)	(10.1 ± 3.3)	(10.5 ± 0.7)	(10.8 ± 1.8)
4th Analysis Day**	385	385	385	385	385	385	385
PPB	(7.30 ± 1.4)	(11.2 ± 1.4)	(9.60 ± 1.3)	(8.30 ± 2.6)	(10.5 ± 3.4)	(11.1 ± 0.8)	(9.80 ± 1.6)

(Continued)

STABILITY STUDY FOR GROUP III COMPOUNDS* (Continued)
Cylinder III-A5

ACTIVITY	COMPOUND						
	Freon 114	Freon 113	Vinylidiene Chloride	Acetone	1,4-Dioxane	Toluene	Chloro-benzene
RTI QUALITY CONTROL***							
1st Analysis Date	3-9-86	3-9-86	3-9-86	3-9-86	3-9-86	3-9-86	3-9-86
PPB	(11.9 ± 1.7)	(20.4 ± 1.8)	(8.80 ± 0.9)	(11.0 ± 3.0)	(14.0 ± 8.0)	(13.5 ± 1.6)	(8.10 ± 1.1)
NBS Concen. PPB	(10.6 ± 1.0)	(20.2 ± 1.2)	(9.20 ± 0.5)	(14.0 ± 3.0)	(15.0 ± 6.0)	(13.2 ± 1.2)	(8.10 ± 0.5)
2nd Analysis Day	70	70	70	70	70	70	70
PPB	(15.0 ± 2.1)	(15.8 ± 1.6)	(21.5 ± 2.2)	(47.0 ± 14)	(42.0 ± 21)	(10.3 ± 1.2)	(11.4 ± 1.4)
NBS Concen. PPB	(18.1 ± 1.8)	(15.7 ± 0.9)	(20.8 ± 1.1)	(47.0 ± 8.0)	(42.0 ± 17)	(10.8 ± 0.9)	(11.2 ± 0.7)
3rd Analysis Day	151	151	151	151	151	151	151
PPB	(11.9 ± 2.2)	(15.1 ± 1.9)	(14.8 ± 2.0)	(12.3 ± 3.8)	(16.5 ± 5.4)	(9.60 ± 0.7)	(12.0 ± 2.0)
NBS Concen. PPB	(10.8 ± 1.4)	(15.4 ± 1.0)	(16.0 ± 1.0)	(13.8 ± 2.2)	(15.9 ± 3.0)	(9.90 ± 0.6)	(12.3 ± 0.7)
4th Analysis Day	385	385	385	385	385	385	385
PPB	(9.60 ± 1.1)	(20.9 ± 1.2)	(9.70 ± 0.5)	(11.4 ± 2.4)	(14.3 ± 5.7)	(13.4 ± 1.1)	(7.80 ± 0.4)
NBS Concen. PPB	(10.6 ± 1.0)	(20.2 ± 1.2)	(9.20 ± 0.5)	(14.0 ± 3.0)	(15.0 ± 6.0)	(13.2 ± 1.1)	(8.10 ± 0.4)

* Calibration was performed using NBS primary standard.
** Number of days after 1st RTI analysis date.
*** A different NBS primary standard was analyzed as an internal quality control on each day of RTI analysis.
**** All RTI analyses were performed using cryogenic preconcentration followed by GC/FID.

STABILITY STUDY FOR GROUP III COMPOUNDS*
Cylinder III-A6

ACTIVITY	COMPOUND						
	Freon 114	Freon 113	Vinylidiene Chloride	Acetone	1,4-Dioxane	Toluene	Chloro-benzene
MANUFACTURER ANALYSIS							
Theoretical PPB	(30.0)	(10.0)	(30.9)	(10.0)	(30.0)	(10.2)	(30.0)
1st Analysis Date	7-23-85	7-23-85	7-23-85	7-23-85	7-23-85	7-23-85	7-23-85
PPB	(28.6)	(9.60)	(29.6)	(8.00)	(26.0)	(8.60)	(30.4)
2nd Analysis Date	8-27-85	8-27-85	8-27-85	8-27-85	8-27-85	8-27-85	8-27-85
PPB	(31.6)	(9.10)	(29.8)	(8.00)	(26.0)	(8.70)	(31.0)
RTI ANALYSIS****							
1st Analysis Date	3-27-86	3-27-86	3-27-86	3-27-86	3-27-86	3-27-86	3-27-86
PPB	(23.7 ± 3.4)	(9.70 ± 0.9)	(30.1 ± 3.0)	(10.0 ± 3.0)	(26.0 ± 15)	(9.80 ± 1.1)	(30.2 ± 3.4)
2nd Analysis Day**	52	52	52	52	52	52	52
PPB	(21.4 ± 3.0)	(10.1 ± 1.0)	(32.4 ± 3.3)	(10.0 ± 3.0)	(29.0 ± 15)	(10.5 ± 1.2)	(30.3 ± 3.6)
3rd Analysis Day**	150	150	150	150	150	150	150
PPB	(25.7 ± 4.9)	(9.60 ± 1.2)	(31.8 ± 4.4)	(9.90 ± 3.1)	(33.5 ± 11.0)	(10.2 ± 0.7)	(29.8 ± 5.0)
4th Analysis Day**	on audit	on audit	on audit	on audit	on audit	on audit	on audit
PPB							

(Continued)

STABILITY STUDY FOR GROUP III COMPOUNDS* (Continued)
Cylinder III-A6

ACTIVITY	COMPOUND						
	Freon 114	Freon 113	Vinylidiene Chloride	Acetone	1,4-Dioxane	Toluene	Chloro-benzene
RTI QUALITY CONTROL***							
1st Analysis Date	3-27-86	3-27-86	3-27-86	3-27-86	3-27-86	3-27-86	3-27-86
PPB	(11.6 ± 1.7)	(20.1 ± 1.8)	(8.30 ± 0.9)	(12.0 ± 3.0)	(16.0 ± 8.0)	(12.7 ± 1.6)	(7.90 ± 1.1)
NBS Concen. PPB	(10.6 ± 1.0)	(20.2 ± 1.2)	(9.20 ± 0.5)	(14.0 ± 3.0)	(15.0 ± 6.0)	(13.2 ± 1.1)	(8.10 ± 0.5)
2nd Analysis Day	52	52	52	52	52	52	52
PPB	(15.0 ± 2.1)	(15.8 ± 1.6)	(21.5 ± 2.2)	(47.0 ± 14)	(42.0 ± 21)	(10.3 ± 1.2)	(11.4 ± 1.4)
NBS Concen. PPB	(18.1 ± 1.8)	(15.7 ± 0.9)	(20.8 ± 1.1)	(47.0 ± 8.0)	(42.0 ± 17)	(10.8 ± 0.9)	(11.2 ± 0.7)
3rd Analysis Day	150	150	150	150	I50	150	150
PPB	(8.70 ± 1.6)	(14.8 ± 1.9)	(16.3 ± 2.2)	(13.0 ± 4.0)	(20.5 ± 6.7)	(10.0 ± 0.7)	(11.8 ± 2.0)
NBS Concen. PPB	(10.8 ± 1.4)	(15.4 ± 1.0)	(16.0 ± 1.0)	(13.8 ± 2.2)	(15.9 ± 3.0)	(9.90 ± 0.6)	(12.3 ± 0.7)
4th Analysis Day	385	385	385	385	385	385	385
PPB	(9.60 ± 1.1)	(20.9 ± 1.2)	(9.70 ± 0.5)	(11.4 ± 2.4)	(14.3 ± 5.7)	(13.4 ± 1.1)	(7.80 ± 0.4)
NBS Concen. PPB	(10.6 ± 1.0)	(20.2 ± 1.2)	(9.20 ± 0.5)	(14.0 ± 3.0)	(15.0 ± 6.0)	(13.2 ± 1.1)	(8.10 ± 0.4)

* Calibration was performed using NBS primary standard.
** Number of days after 1st RTI analysis date.
*** A different NBS primary standard was analyzed as an internal quality control on each day of RTI analysis.
**** All RTI analyses were performed using cryogenic preconcentration followed by GC/FID.

STABILITY STUDY FOR GROUP III COMPOUNDS*
Cylinder III-A7

ACTIVITY	COMPOUND						
	Freon 114	Freon 113	Vinylidiene Chloride	Acetone	1,4-Dioxane	Toluene	Chlorobenzene
MANUFACTURER ANALYSIS							
Theoretical PPB	(10.0)	(10.2)	(10.1)	(10.0)	(10.0)	(10.1)	(10.1)
1st Analysis Date	4-10-85	4-10-85	4-10-85	4-10-85	4-10-85	4-10-85	4-10-85
PPB	(9.90)	(9.60)	(8.90)	(11.0)	(9.00)	(9.00)	(9.70)
2nd Analysis Date	5-22-85	5-22-85	5-22-85	5-22-85	5-22-85	5-22-85	5-22-85
PPB	(9.80)	(9.80)	(9.30)	(8.00)	(7.00)	(9.00)	(8.80)
RTI ANALYSIS**							
1st Analysis Date	3-9-86	3-9-86	3-9-86	3-9-86	3-9-86	3-9-86	3-9-86
PPB	(9.10 ± 1.3)	(10.2 ± 1.0)	(8.70 ± 0.9)	(9.00 ± 3.0)	(10.0 ± 6.0)	(10.6 ± 1.3)	(11.1 ± 1.5)
2nd Analysis Day**	72	72	72	72	72	72	72
PPB	(8.60 ± 1.2)	(10.0 ± 1.0)	(9.50 ± 1.0)	(9.00 ± 3.0)	(11.0 ± 6.0)	(10.6 ± 1.2)	(10.9 ± 1.3)
3rd Analysis Day**	150	150	150	150	150	150	150
PPB	(8.30 ± 1.6)	(10.3 ± 1.3)	(8.90 ± 1.2)	(9.90 ± 3.1)	(13.0 ± 4.2)	(10.9 ± 0.8)	(11.7 ± 2.0)
4th Analysis Day**	385	385	385	385	385	385	385
PPB	(7.20 ± 1.4)	(11.3 ± 1.4)	(9.60 ± 1.2)	(8.70 ± 2.7)	(10.8 ± 3.5)	(11.1 ± 0.8)	(10.8 ± 1.7)

(Continued)

STABILITY STUDY FOR GROUP III COMPOUNDS* (Continued)
Cylinder III-A7

ACTIVITY	COMPOUND						
	Freon 114	Freon 113	Vinylidiene Chloride	Acetone	1,4-Dioxane	Toluene	Chloro-benzene
RTI QUALITY CONTROL***							
1st Analysis Date	3-9-86	3-9-86	3-9-86	3-9-86	3-9-86	3-9-86	3-9-86
PPB	(11.9 ± 1.7)	(20.4 ± 1.8)	(8.80 ± 0.9)	(11.0 ± 3.0)	(14.0 ± 8.0)	(13.5 ± 1.6)	(8.10 ± 1.1)
NBS Concen. PPB	(10.6 ± 1.0)	(20.2 ± 1.2)	(9.20 ± 0.5)	(14.0 ± 3.0)	(15.0 ± 6.0)	(13.2 ± 1.1)	(8.10 ± 0.5)
2nd Analysis Day	72	72	72	72	72	72	72
PPB	(14.6 ± 2.0)	(15.8 ± 1.6)	(21.5 ± 2.2)	(48.0 ± 14)	(42.0 ± 21)	(10.5 ± 1.2)	(11.0 ± 1.4)
NBS Concen. PPB	(18.1 ± 1.8)	(15.7 ± 0.9)	(20.8 ± 1.1)	(47.0 ± 8.0)	(42.0 ± 17)	(10.8 ± 0.9)	(11.2 ± 0.7)
3rd Analysis Day	150	150	150	150	150	150	150
PPB	(8.70 ± 1.6)	(14.8 ± 1.9)	(16.3 ± 2.2)	(13.0 ± 4.0)	(20.5 ± 6.7)	(10.0 ± 0.7)	(11.8 ± 2.0)
NBS Concen. PPB	(10.8 ± 1.4)	(15.4 ± 1.0)	(16.0 ± 1.0)	(13.8 ± 2.2)	(15.9 ± 3.0)	(9.90 ± 0.6)	(12.3 ± 0.7)
4th Analysis Day	385	385	385	385	385	385	385
PPB	(9.60 ± 1.1)	(20.9 ± 1.2)	(9.70 ± 0.5)	(11.4 ± 2.4)	(14.3 ± 5.7)	(13.4 ± 1.1)	(7.80 ± 0.4)
NBS Concen. PPB	(10.6 ± 1.0)	(20.2 ± 1.2)	(9.20 ± 0.5)	(14.0 ± 3.0)	(15.0 ± 6.0)	(13.2 ± 1.1)	(8.10 ± 0.4)

* Calibration was performed using NBS primary standard.
** Number of days after 1st RTI analysis date.
*** A different NBS primary standard was analyzed as an internal quality control on each day of RTI analysis.
**** All RTI analyses were performed using cryogenic preconcentration followed by GC/FID.

STABILITY STUDY FOR GROUP III COMPOUNDS*
Cylinder III-A8

ACTIVITY		COMPOUND						
		Freon 114	Freon 113	Vinylidiene Chloride	Acetone	1,4-Dioxane	Toluene	Chloro-benzene
MANUFACTURER ANALYSIS								
Theoretical	PPB	(10.0)	(10.2)	(10.1)	(10.0)	(10.0)	(10.1)	(10.1)
1st Analysis	Date	4-10-85	4-10-85	4-10-85	4-10-85	4-10-85	4-10-85	4-10-85
	PPB	(9.90)	(9.60)	(8.90)	(11.0)	(9.00)	(9.00)	(9.70)
2nd Analysis	Date	5-22-85	5-22-85	5-22-85	5-22-85	5-22-85	5-22-85	5-22-85
	PPB	(9.80)	(9.80)	(9.30)	(8.00)	(7.00)	(9.00)	(8.80)
RTI ANALYSIS**								
1st Analysis	Date	3-9-86	3-9-86	3-9-86	3-9-86	3-9-86	3-9-86	3-9-86
	PPB	(9.10 ± 1.3)	(10.0 ± 1.0)	(8.70 ± 0.9)	(9.00 ± 3.0)	(10.0 ± 6.0)	(10.3 ± 1.2)	(10.9 ± 1.4)
2nd Analysis	Day**	70	70	70	70	70	70	70
	PPB	(8.60 ± 1.2)	(10.1 ± 1.0)	(9.30 ± 0.9)	(11.0 ± 3.0)	(12.0 ± 6.0)	(10.6 ± 1.2)	(12.1 ± 1.5)
3rd Analysis	Day**	151	151	151	151	151	151	151
	PPB	(9.30 ± 1.8)	(9.70 ± 1.3)	(8.50 ± 1.1)	(8.80 ± 2.7)	(10.5 ± 3.4)	(10.7 ± 0.7)	(10.8 ± 1.8)
4th Analysis	Day**	385	385	385	385	385	385	385
	PPB	(7.80 ± 1.5)	(10.3 ± 1.5)	(10.6 ± 1.3)	(9.00 ± 2.8)	(10.6 ± 3.4)	(11.3 ± 0.7)	(11.2 ± 1.8)

(Continued)

STABILITY STUDY FOR GROUP III COMPOUNDS* (Continued)
Cylinder III-A8

ACTIVITY	COMPOUND						
	Freon 114	Freon 113	Vinylidiene Chloride	Acetone	1,4-Dioxane	Toluene	Chlorobenzene
	RTI QUALITY CONTROL***						
1st Analysis Date	3-9-86	3-9-86	3-9-86	3-9-86	3-9-86	3-9-86	3-9-86
PPB	(11.9 ± 1.7)	(20.4 ± 1.8)	(8.80 ± 0.9)	(11.0 ± 3.0)	(14.0 ± 8.0)	(13.5 ± 1.6)	(8.10 ± 1.1)
NBS Concen. PPB	(10.6 ± 1.0)	(20.2 ± 1.2)	(9.20 ± 0.5)	(14.0 ± 3.0)	(15.0 ± 6.0)	(13.2 ± 1.1)	(8.10 ± 0.5)
2nd Analysis Day	70	70	70	70	70	70	70
PPB	(15.0 ± 2.1)	(15.8 ± 1.6)	(21.5 ± 2.2)	(47.0 ± 14)	(42.0 ± 21)	(10.3 ± 1.2)	(11.4 ± 1.4)
NBS Concen. PPB	(18.1 ± 1.8)	(15.7 ± 0.9)	(20.8 ± 1.1)	(47.0 ± 8.0)	(42.0 ± 17)	(10.8 ± 0.9)	(11.2 ± 0.7)
3rd Analysis Day	151	151	151	151	151	151	151
PPB	(11.9 ± 2.2)	(15.1 ± 1.9)	(14.8 ± 2.0)	(12.3 ± 3.8)	(16.5 ± 5.4)	(9.60 ± 0.7)	(12.0 ± 2.0)
NBS Concen. PPB	(10.8 ± 1.4)	(15.4 ± 1.0)	(16.0 ± 1.0)	(13.8 ± 2.2)	(15.9 ± 3.0)	(9.90 ± 0.6)	(12.3 ± 0.7)
4th Analysis Day	385	385	385	385	385	385	385
PPB	(9.60 ± 1.1)	(20.9 ± 1.2)	(9.70 ± 0.5)	(11.4 ± 2.4)	(14.3 ± 5.7)	(13.4 ± 1.1)	(7.80 ± 0.4)
NBS Concen. PPB	(10.6 ± 1.0)	(20.2 ± 1.2)	(9.20 ± 0.5)	(14.0 ± 3.0)	(15.0 ± 6.0)	(13.2 ± 1.1)	(8.10 ± 0.4)

* Calibration was performed using NBS primary standard.
** Number of days after 1st RTI analysis date.
*** A different NBS primary standard was analyzed as an internal quality control on each day of RTI analysis.
**** All RTI analyses were performed using cryogenic preconcentration followed by GC/FID.

STABILITY STUDY FOR GROUP III COMPOUNDS*
Cylinder III-A9

ACTIVITY		COMPOUND						
		Freon 114	Freon 113	Vinylidiene Chloride	Acetone	1,4-Dioxane	Toluene	Chloro-benzene
MANUFACTURER ANALYSIS								
Theoretical	PPB	(30.0)	(30.0)	(30.1)	(10.0)	(10.0)	(10.1)	(10.1)
1st Analysis	Date	4-23-85	4-23-85	4-23-85	4-23-85	4-23-85	4-23-85	4-23-85
	PPB	(27.6)	(28.9)	(28.0)	(10.0)	(9.00)	(8.80)	(9.60)
2nd Analysis	Date	6-4-85	6-4-85	6-4-85	6-4-85	6-4-85	6-4-85	6-4-85
	PPB	(27.3)	(28.7)	(27.2)	(5.00)	(9.00)	(8.80)	(8.30)
RTI ANALYSIS****								
1st Analysis	Date	3-27-86	3-27-86	3-27-86	3-27-86	3-27-86	3-27-86	3-27-86
	PPB	(24.8 ± 3.5)	(31.1 ± 3.1)	(31.3 ± 3.1)	(10.0 ± 3.0)	(10.0 ± 5.0)	(10.1 ± 1.2)	(10.2 ± 1.4)
2nd Analysis	Day**	on audit	on audit	on audit	on audit	on audit	on audit	on audit
	PPB							
3rd Analysis	Day**	151	151	151	151	151	151	151
	PPB	(29.7 ± 5.6)	(31.8 ± 4.1)	(33.0 ± 4.6)	(6.70 ± 2.1)	(14.9 ± 4.9)	(11.6 ± 0.8)	(11.1 ± 1.9)
4th Analysis	Day**	on audit	on audit	on audit	on audit	on audit	on audit	on audit
	PPB							

(Continued)

STABILITY STUDY FOR GROUP III COMPOUNDS* (Continued)
Cylinder III-A9

ACTIVITY	COMPOUND						
	Freon 114	Freon 113	Vinylidiene Chloride	Acetone	1,4-Dioxane	Toluene	Chlorobenzene
RTI QUALITY CONTROL***							
1st Analysis Date	3-27-86	3-27-86	3-27-86	3-27-86	3-27-86	3-27-86	3-27-86
PPB	(11.7 ± 1.7)	(20.5 ± 1.8)	(8.50 ± 0.9)	(12.0 ± 3.0)	(14.0 ± 8.0)	(14.2 ± 1.6)	(8.00 ± 1.1)
NBS Concen. PPB	(10.6 ± 1.0)	(20.2 ± 1.2)	(9.20 ± 0.5)	(14.0 ± 3.0)	(15.0 ± 6.0)	(13.2 ± 1.1)	(8.10 ± 0.5)
2nd Analysis Day	52	52	52	52	52	52	52
PPB	(15.0 ± 2.1)	(15.8 ± 1.6)	(21.5 ± 2.2)	(47.0 ± 14)	(42.0 ± 21)	(10.3 ± 1.2)	(11.4 ± 1.4)
NBS Concen. PPB	(18.1 ± 1.8)	(15.7 ± 0.9)	(20.8 ± 1.1)	(47.0 ± 8.0)	(42.0 ± 17)	(10.8 ± 0.9)	(11.2 ± 0.7)
3rd Analysis Day	151	151	151	151	151	151	151
PPB	(11.9 ± 2.2)	(15.1 ± 1.9)	(14.8 ± 2.0)	(12.3 ± 3.8)	(16.5 ± 5.4)	(9.60 ± 0.7)	(12.0 ± 2.0)
NBS Concen. PPB	(10.8 ± 1.4)	(15.4 ± 1.9)	(16.0 ± 1.0)	(13.8 ± 2.2)	(15.9 ± 3.0)	(9.90 ± 0.6)	(12.3 ± 0.7)
4th Analysis Day	385	385	385	385	385	385	385
PPB	(9.60 ± 1.1)	(20.9 ± 1.2)	(9.70 ± 0.5)	(11.4 ± 2.4)	(14.3 ± 5.7)	(13.4 ± 1.1)	(7.80 ± 0.4)
NBS Concen. PPB	(10.6 ± 1.0)	(20.2 ± 1.2)	(9.20 ± 0.5)	(14.0 ± 3.0)	(15.0 ± 6.0)	(13.2 ± 1.1)	(8.10 ± 0.4)

* Calibration was performed using NBS primary standard.
** Number of days after 1st RTI analysis date.
*** A different NBS primary standard was analyzed as an internal quality control on each day of RTI analysis.
**** All RTI analyses were performed using cryogenic preconcentration followed by GC/FID.

STABILITY STUDY FOR GROUP III COMPOUNDS*
Cylinder III-A10

ACTIVITY	COMPOUND						
	Freon 114	Freon 113	Vinylidiene Chloride	Acetone	1,4-Dioxane	Toluene	Chloro-benzene
MANUFACTURER ANALYSIS							
Theoretical PPB	(140)	(140)	(120)	(100)	(100)	(150)	(150)
1st Analysis Date	5-9-86	5-9-86	5-9-86	5-9-86	5-9-86	5-9-86	5-9-86
PPB	(140)	(138)	(117)	(94.2)	(107)	(152)	(181)
RTI ANALYSIS****							
1st Analysis Date	5-21-86	5-21-86	5-21-86	5-21-86	5-21-86	5-21-86	5-21-86
PPB	(137 ± 19)	(152 ± 15)	(122 ± 12)	(112 ± 33)	(114 ± 57)	(159 ± 18)	(153 ± 19)
2nd Analysis Day**	97	97	97	97	97	97	97
PPB	(125 ± 23)	(143 ± 18)	(123 ± 17)	(114 ± 35)	(125 ± 41)	(161 ± 11)	(152 ± 26)
3rd Analysis Day**	331	331	331	331	331	331	331
PPB	(141 ± 25)	(159 ± 19)	(131 ± 17)	(107 ± 33)	(145 ± 46)	(167 ± 12)	(173 ± 29)
RTI QUALITY CONTROL***							
1st Analysis Date	5-21-86	5-21-86	5-21-86	5-21-86	5-21-86	5-21-86	5-21-86
PPB	(14.6 ± 2.0)	(15.8 ± 1.6)	(21.5 ± 2.2)	(48.0 ± 14)	(42.0 ± 21)	(10.5 ± 1.2)	(11.0 ± 1.4)
NBS Concen. PPB	(18.1 ± 1.8)	(15.7 ± 0.9)	(20.8 ± 1.1)	(47.0 ± 8.0)	(42.0 ± 17)	(10.8 ± 0.9)	(11.2 ± 0.7)
2nd Analysis Day	97	97	97	97	97	97	97
PPB	(11.9 ± 2.2)	(15.1 ± 1.9)	(14.8 ± 2.0)	(12.3 ± 3.8)	(16.5 ± 5.4)	(9.60 ± 0.7)	(12.0 ± 2.0)
NBS Concen. PPB	(10.8 ± 1.4)	(15.4 ± 1.0)	(16.0 ± 1.0)	(13.8 ± 2.2)	(15.9 ± 3.0)	(9.90 ± 0.6)	(12.3 ± 0.7)
3rd Analysis Day	331	331	331	331	331	331	331
PPB	(11.0 ± 1.0)	(21.0 ± 1.3)	(9.60 ± 0.52)	(12.1 ± 2.6)	(15.9 ± 3.2)	(13.9 ± 1.2)	(8.80 ± 0.6)
NBS Concen. PPB	(10.6 ± 1.0)	(20.2 ± 1.2)	(9.20 ± 0.5)	(14.0 ± 3.0)	(15.0 ± 3.0)	(13.2 ± 1.1)	(8.10 ± 0.5)

* Calibration was performed using NBS primary standard.
** Number of days after 1st RTI analysis date.
*** A different NBS primary standard was analyzed as an internal quality control on each day of RTI analysis.
**** All RTI analyses were performed using cryogenic preconcentration followed by GC/FID.

STABILITY STUDY FOR GROUP III COMPOUNDS*
Cylinder III-A11

ACTIVITY		COMPOUND						
		Freon 114	Freon 113	Vinylidiene Chloride	Acetone	1,4-Dioxane	Toluene	Chloro-benzene
MANUFACTURER ANALYSIS								
Theoretical	PPB	(140)	(140)	(140)	(120)	(120)	(150)	(150)
1st Analysis	Date	5-9-86	5-9-86	5-9-86	5-9-86	5-9-86	5-9-86	5-9-86
	PPB	(139)	(140)	(142)	(111)	(116)	(155)	(182)
RTI ANALYSIS****								
1st Analysis	Date	5-21-86	5-21-86	5-21-86	5-21-86	5-21-86	5-21-86	5-21-86
	PPB	(139 ± 20)	(155 ± 15)	(148 ± 15)	(109 ± 32)	(134 ± 67)	(169 ± 19)	(167 ± 20)
2nd Analysis	Day**	97	97	97	97	97	97	97
	PPB	(131 ± 24)	(148 ± 19)	(152 ± 20)	(93.0 ± 29)	(152 ± 49)	(169 ± 12)	(156 ± 26)
3rd Analysis	Day**	331	331	331	331	331	331	331
	PPB	(141 ± 25)	(156 ± 19)	(154 ± 20)	(89.0 ± 24)	(162 ± 52)	(172 ± 12)	(169 ± 27)
RTI QUALITY CONTROL***								
1st Analysis	Date	5-21-86	5-21-86	5-21-86	5-21-86	5-21-86	5-21-86	5-21-86
	PPB	(14.6 ± 2.0)	(15.8 ± 1.6)	(21.5 ± 2.2)	(48.0 ± 14)	(42.0 ± 21)	(10.5 ± 1.2)	(11.0 ± 1.4)
NBS Concen.	PPB	(18.1 ± 1.8)	(15.7 ± 0.9)	(20.8 ± 1.1)	(47.0 ± 8.0)	(42.0 ± 17)	(10.8 ± 0.9)	(11.2 ± 0.7)
2nd Analysis	Day	97	97	97	97	97	97	97
	PPB	(11.9 ± 2.2)	(15.1 ± 1.9)	(14.8 ± 2.0)	(12.3 ± 3.8)	(16.5 ± 5.4)	(9.60 ± 0.7)	(12.0 ± 2.0)
NBS Concen.	PPB	(10.8 ± 1.4)	(15.4 ± 1.0)	(16.0 ± 1.0)	(13.8 ± 2.2)	(15.9 ± 3.0)	(9.90 ± 0.6)	(12.3 ± 0.7)
3rd Analysis	Day	331	331	331	331	331	331	331
	PPB	(11.0 ± 1.0)	(21.0 ± 1.3)	(9.60 ± 0.5)	(12.1 ± 2.6)	(15.9 ± 3.2)	(13.9 ± 1.2)	(8.80 ± 0.6)
NBS Concen.	PPB	(10.6 ± 1.0)	(20.2 ± 1.2)	(9.20 ± 0.5)	(14.0 ± 3.0)	(15.0 ± 3.0)	(13.2 ± 1.1)	(8.10 ± 0.5)

* Calibration was performed using NBS primary standard.
** Number of days after 1st RTI analysis date.
*** A different NBS primary standard was analyzed as an internal quality control on each day of RTI analysis.
**** All RTI analyses were performed using cryogenic preconcentration followed by GC/FID.

STABILITY STUDY FOR GROUP III COMPOUNDS*
Cylinder III-A12

ACTIVITY	COMPOUND						
	Freon 114	Freon 113	Vinylidiene Chloride	Acetone	1,4-Dioxane	Toluene	Chloro-benzene
MANUFACTURER ANALYSIS							
Theoretical PPB	(140)	(140)	(140)	(120)	(120)	(150)	(150)
1st Analysis Date	5-9-86	5-9-86	5-9-86	5-9-86	5-9-86	5-9-86	5-9-86
PPB	(143)	(139)	(138)	(118)	(113)	(148)	(175)
RTI ANALYSIS****							
1st Analysis Date	5-21-86	5-21-86	5-21-86	5-21-86	5-21-86	5-21-86	5-21-86
PPB	(138 ± 20)	(151 ± 15)	(148 ± 15)	(143 ± 43)	(134 ± 67)	(163 ± 18)	(157 ± 19)
2nd Analysis Day**	97	97	97	97	97	97	97
PPB	(128 ± 24)	(145 ± 19)	(152 ± 21)	(152 ± 47)	(154 ± 50)	(165 ± 11)	(157 ± 27)
3rd Analysis Day**	331	331	331	331	331	331	331
PPB	(142 ± 26)	(155 ± 20)	(157 ± 22)	(144 ± 44)	(164 ± 53)	(162 ± 11)	(161 ± 27)
RTI QUALITY CONTROL***							
1st Analysis Date	5-21-86	5-21-86	5-21-86	5-21-86	5-21-86	5-21-86	5-21-86
PPB	(14.6 ± 2.0)	(15.8 ± 1.6)	(21.5 ± 2.2)	(48.0 ± 14)	(42.0 ± 21)	(10.5 ± 1.2)	(11.0 ± 1.4)
NBS Concen. PPB	(18.1 ± 1.8)	(15.7 ± 0.9)	(20.8 ± 1.1)	(47.0 ± 8)	(42.0 ± 17)	(10.8 ± 0.9)	(11.2 ± 0.7)
2nd Analysis Day	97	97	97	97	97	97	97
PPB	(11.9 ± 2.2)	(15.1 ± 1.9)	(14.8 ± 2.0)	(12.3 ± 3.8)	(16.5 ± 5.4)	(9.60 ± 0.7)	(12.0 ± 2.0)
NBS Concen. PPB	(10.8 ± 1.4)	(15.4 ± 1.0)	(16.0 ± 1.0)	(13.8 ± 2.2)	(15.9 ± 3.0)	(9.90 ± 0.6)	(12.3 ± 0.7)
3rd Analysis Day	331	331	331	331	331	331	
PPB	(11.0 ± 1.0)	(21.0 ± 1.3)	(9.60 ± 0.5)	(12.1 ± 2.6)	(15.9 ± 3.2)	(13.9 ± 1.2)	(8.80 ± 0.6)
NBS Concen. PPB	(10.6 ± 1.0)	(20.2 ± 1.2)	(9.20 ± 0.5)	(14.0 ± 3.0)	(15.0 ± 3.0)	(13.2 ± 1.1)	(8.10 ± 0.5)

* Calibration was performed using NBS primary standard.
** Number of days after 1st RTI analysis date.
*** A different NBS primary standard was analyzed as an internal quality control on each day of RTI analysis.
**** All RTI analyses were performed using cryogenic preconcentration followed by GC/FID.

STABILITY STUDY FOR GROUP III COMPOUNDS*
Cylinder III-A13

ACTIVITY	COMPOUND						
	Freon 114	Freon 113	Vinylidiene Chloride	Acetone	1,4-Dioxane	Toluene	Chloro-benzene
MANUFACTURER ANALYSIS							
Theoretical PPB	(10.0)	(20.3)	(10.2)	(20.4)	(20.4)	(10.3)	(10.2)
1st Analysis Date	4/28/87	4/28/87	4/28/87	4/28/87	4/28/87	4/28/87	4/28/87
PPB	(9.60)	(19.1)	(9.89)	(20.5)	(18.0)	(10.8)	(12.1)
RTI ANALYSIS****							
1st Analysis Date	7/10/87	7/10/87	7/10/87	7/10/87	7/10/87	7/10/87	7/10/87
PPB	(11.0 ± 2.8)	(22.0 ± 4.4)	(11.9 ± 2.5)	(17.8 ± 3.9)	(22.9 ± 5.1)	(11.1 ± 1.0)	(10.9 ± 1.1)
2nd Analysis Day**	25	25	25	25	25	25	25
PPB	NA	(20.2 ± 4.1)	(11.2 ± 2.4)	(17.2 ± 3.8)	(22.8 ± 5.1)	(11.2 ± 1.0)	(11.0 ± 1.2)
RTI QUALITY CONTROL***							
1st Analysis Date	7/10/87	7/10/87	7/10/87	7/10/87	7/10/87	7/10/87	7/10/87
PPB	(11.4 ± 2.9)	(16.4 ± 3.3)	(15.7 ± 3.3)	(13.8 ± 3.1)	(16.7 ± 3.7)	(10.2 ± 0.9)	(12.2 ± 1.3)
NBS Concen. PPB	(10.6 ± 1.2)	(15.4 ± 1.0)	(16.0 ± 1.0)	(13.8 ± 2.2)	(15.9 ± 3.0)	(9.90 ± 0.6)	(12.3 ± 0.7)
2nd Analysis Day	25	25	25	25	25	25	25
PPB	NA	(15.4 ± 3.1)	(15.1 ± 3.2)	NA	(15.9 ± 3.5)	(9.48 ± 0.8)	(11.8 ± 1.2)
NBS Concen. PPB	(10.6 ± 1.2)	(15.4 ± 1.0)	(16.0 ± 1.0)	(13.8 ± 2.2)	(15.9 ± 3.0)	(9.90 ± 0.6)	(12.3 ± 0.7)

* Calibration was performed using NBS primary standard.
** Number of days after 1st RTI analysis date.
*** A different NBS primary standard was analyzed as an internal quality control on each day of RTI analysis.
**** All RTI analyses were performed using automated cryogenic preconcentration with cryofocusing followed by GC/FID.
NA = Not Analyzed

STABILITY STUDY FOR GROUP III COMPOUNDS*
Cylinder III-A14

ACTIVITY		COMPOUND						
		Freon 114	Freon 113	Vinylidiene Chloride	Acetone	1,4-Dioxane	Toluene	Chloro-benzene
MANUFACTURER ANALYSIS								
Theoretical	PPB	(10.0)	(10.0)	(10.2)	(20.0)	(20.0)	(10.1)	(10.0)
1st Analysis	Date	4/29/87	4/29/87	4/29/87	4/29/87	4/29/87	4/29/87	4/29/87
	PPB	(9.92)	(9.88)	(9.91)	(17.7)	(17.0)	(10.3)	(11.7)
RTI ANALYSIS**								
1st Analysis	Date	7/13/87	7/13/87	7/13/87	7/13/87	7/13/87	7/13/87	7/13/87
	PPB	NA	(9.73 ± 2.0)	(9.54 ± 2.0)	(16.8 ± 3.7)	(18.4 ± 4.1)	(10.3 ± 0.9)	(10.6 ± 1.1)
2nd Analysis	Day**	21	21	21	21	21	21	21
	PPB	NA	(10.4 ± 2.1)	(10.4 ± 2.2)	(16.3 ± 3.6)	(18.8 ± 4.2)	(10.1 ± 0.9)	(10.3 ± 1.1)
RTI QUALITY CONTROL***								
1st Analysis	Date	7/13/87	7/13/87	7/13/87	7/13/87	7/13/87	7/13/87	7/13/87
	PPB	NA	(16.1 ± 3.2)	(16.2 ± 3.4)	(14.5 ± 3.2)	(16.7 ± 3.7)	(10.9 ± 0.9)	(12.6 ± 1.3)
NBS Concen.	PPB	(10.6 ± 1.2)	(15.4 ± 1.0)	(16.0 ± 1.0)	(13.8 ± 2.2)	(15.9 ± 3.0)	(9.90 ± 0.6)	(12.3 ± 0.7)
2nd Analysis	Day	21	21	21	21	21	21	21
	PPB	NA	(15.4 ± 3.1)	(15.1 ± 3.2)	(12.8 ± 2.8)	(15.9 ± 3.5)	(9.48 ± 0.8)	(11.8 ± 1.2)
NBS Concen.	PPB	(10.6 ± 1.2)	(15.4 ± 1.0)	(16.0 ± 1.0)	(13.8 ± 2.2)	(15.9 ± 3.0)	(9.90 ± 0.6)	(12.3 ± 0.7)

* Calibration was performed using NBS primary standard.
** Number of days after 1st RTI analysis date.
*** A different NBS primary standard was analyzed as an internal quality control on each day of RTI analysis.
**** All RTI analyses were performed using automated cryogenic preconcentration with cryofocusing followed by GC/FID.
NA = Not Analyzed

STABILITY STUDY FOR GROUP III COMPOUNDS*
Cylinder III-A15

ACTIVITY		COMPOUND						
		Freon 114	Freon 113	Vinylidiene Chloride	Acetone	1,4-Dioxane	Toluene	Chloro-benzene
MANUFACTURER ANALYSIS								
Theoretical	PPB	(10.0)	(20.7)	(10.4)	(20.7)	(20.7)	(10.4)	(10.3)
1st Analysis	Date	4/29/87	4/29/87	4/29/87	4/29/87	4/29/87	4/29/87	4/29/87
	PPB	(9.93)	(19.3)	(9.99)	(18.0)	(17.0)	(10.8)	(11.8)
RTI ANALYSIS**								
1st Analysis	Date	7/16/87	7/16/87	7/16/87	7/16/87	7/16/87	7/16/87	7/16/87
	PPB	(11.1 ± 2.8)	NA	NA	(16.6 ± 3.7)	(18.9 ± 4.2)	(10.0 ± 0.9)	(9.71 ± 1.0)
2nd Analysis	Day**	19	19	19	19	19	19	19
	PPB	NA	NA	(9.40 ± 2.0)	(15.8 ± 3.5)	(19.2 ± 4.3)	(10.1 ± 0.9)	(10.2 ± 1.1)
RTI QUALITY CONTROL***								
1st Analysis	Date	7/16/87	7/16/87	7/16/87	7/16/87	7/16/87	7/16/87	7/16/87
	PPB	(11.4 ± 2.9)	NA	NA	(15.1 ± 3.3)	(16.3 ± 3.6)	(10.3 ± 0.9)	(12.6 ± 1.3)
NBS Concen.	PPB	(10.6 ± 1.2)	(15.4 ± 1.0)	(16.0 ± 1.0)	(13.8 ± 2.2)	(15.9 ± 3.0)	(9.90 ± 0.6)	(12.3 ± 0.7)
2nd Analysis	Day	19	19	19	19	19	19	19
	PPB	NA	(15.4 ± 3.1)	(15.1 ± 3.2)	(12.8 ± 2.8)	(15.9 ± 3.5)	(9.48 ± 0.8)	(11.8 ± 1.2)
NBS Concen.	PPB	(10.6 ± 1.2)	(15.4 ± 1.0)	(16.0 ± 1.0)	(13.8 ± 2.2)	(15.9 ± 3.0)	(9.90 ± 0.6)	(12.3 ± 0.7)

* Calibration was performed using NBS primary standard.
** Number of days after 1st RTI analysis date.
*** A different NBS primary standard was analyzed as an internal quality control on each day of RTI analysis.
**** All RTI analyses were performed using automated cryogenic preconcentration with cryofocusing followed by GC/FID.
NA = Not Analyzed

STABILITY STUDY FOR GROUP III COMPOUNDS*
Cylinder III-A16

ACTIVITY	COMPOUND						
	Freon 114	Freon 113	Vinylidiene Chloride	Acetone	1,4-Dioxane	Toluene	Chlorobenzene
MANUFACTURER ANALYSIS							
Theoretical PPB	(10.0)	(20.3)	(10.2)	(20.3)	(20.3)	(10.2)	(10.1)
1st Analysis Date	4/28/87	4/28/87	4/28/87	4/28/87	4/28/87	4/28/87	4/28/87
PPB	(9.24)	(19.1)	(10.0)	(18.7)	(18.4)	(10.7)	(12.0)
RTI ANALYSIS**							
1st Analysis Date	7/16/87	7/16/87	7/16/87	7/16/87	7/16/87	7/16/87	7/16/87
PPB	(11.3 ± 2.9)	(21.3 ± 4.3)	(11.5 ± 2.4)	(16.7 ± 3.7)	(19.0 ± 4.2)	(9.58 ± 0.8)	(10.0 ± 1.1)
2nd Analysis Day**	19	19	19	19	19	19	19
PPB	(10.6 ± 2.7)	(21.3 ± 4.3)	NA	(17.5 ± 3.9)	(20.4 ± 4.6)	(10.0 ± 0.9)	(10.2 ± 1.1)
RTI QUALITY CONTROL***							
1st Analysis Date	7/16/87	7/16/87	7/16/87	7/16/87	7/16/87	7/16/87	7/16/87
PPB	(11.4 ± 2.9)	NA	NA	(15.2 ± 3.5)	(16.3 ± 3.6)	(10.3 ± 0.9)	(12.6 ± 1.3)
NBS Concen. PPB	(10.6 ± 1.2)	(15.4 ± 1.0)	(16.0 ± 1.0)	(13.8 ± 2.2)	(15.9 ± 3.0)	(9.90 ± 0.6)	(12.3 ± 0.7)
2nd Analysis Day	19	19	19	19	19	19	19
PPB	NA	(15.4 ± 3.1)	(15.1 ± 3.2)	(12.8 ± 2.8)	(15.9 ± 3.5)	(9.48 ± 0.8)	(11.8 ± 1.2)
NBS Concen. PPB	(10.6 ± 1.2)	(15.4 ± 1.0)	(16.0 ± 1.0)	(13.8 ± 2.2)	(15.9 ± 3.0)	(9.90 ± 0.6)	(12.3 ± 0.7)

* Calibration was performed using NBS primary standard.
** Number of days after 1st RTI analysis date.
*** A different NBS primary standard was analyzed as an internal quality control on each day of RTI analysis.
**** All RTI analyses were performed using automated cryogenic preconcentration with cryofocusing followed by GC/FID.
NA = Not Analyzed

STABILITY STUDY FOR GROUP III COMPOUNDS*
Cylinder III-A17

ACTIVITY	COMPOUND						
	Freon 114	Freon 113	Vinylidiene Chloride	Acetone	1,4-Dioxane	Toluene	Chlorobenzene
MANUFACTURER ANALYSIS							
Theoretical PPB	(10.0)	(20.3)	(10.2)	(20.4)	(20.4)	(10.3)	(10.2)
1st Analysis Date	4/27/87	4/27/87	4/27/87	4/27/87	4/27/87	4/27/87	4/27/87
PPB	(9.10)	(19.1)	(9.94)	(20.0)	(18.4)	(10.3)	(11.1)
RTI ANALYSIS**							
1st Analysis Date	7/16/87	7/16/87	7/16/87	7/16/87	7/16/87	7/16/87	7/16/87
PPB	NA	NA	NA	(17.8 ± 4.0)	(20.9 ± 4.7)	(10.8 ± 0.9)	(10.7 ± 1.1)
2nd Analysis Day**	18	18	18	18	18	18	18
PPB	(10.0 ± 2.5)	(20.6 ± 4.1)	(10.6 ± 2.2)	(18.0 ± 3.9)	(21.6 ± 4.8)	(10.8 ± 0.9)	(10.8 ± 1.1)
RTI QUALITY CONTROL***							
1st Analysis Date	7/16/87	7/16/87	7/16/87	7/16/87	7/16/87	7/16/87	7/16/87
PPB	(11.4 ± 2.9)	NA	NA	(15.1 ± 3.3)	(16.3 ± 3.6)	(10.7 ± 0.9)	(12.6 ± 1.3)
NBS Concen. PPB	(10.6 ± 1.2)	(15.4 ± 1.0)	(16.0 ± 1.0)	(13.8 ± 2.2)	(15.9 ± 3.0)	(9.90 ± 0.6)	(12.3 ± 0.7)
2nd Analysis Day	18	18	18	18	18	18	18
PPB	NA	(15.4 ± 3.1)	(15.1 ± 3.2)	(12.8 ± 2.8)	(15.9 ± 3.5)	(9.48 ± 0.8)	(11.8 ± 1.2)
NBS Concen. PPB	(10.6 ± 1.2)	(15.4 ± 1.0)	(16.0 ± 1.0)	(13.8 ± 2.2)	(15.9 ± 3.0)	(9.90 ± 0.6)	(12.3 ± 0.7)

* Calibration was performed using NBS primary standard.
** Number of days after 1st RTI analysis date.
*** A different NBS primary standard was analyzed as an internal quality control on each day of RTI analysis.
**** All RTI analyses were performed using automated cryogenic preconcentration with cryofocusing followed by GC/FID.
NA = Not Analyzed

STABILITY STUDY FOR GROUP IV COMPOUNDS*
Cylinder IV-A1

ACTIVITY	COMPOUND					
	1,3-Butadiene	Ethylene Oxide	Propylene Oxide	Methylene Chloride	Acrylonitrile	Ortho-Xylene
MANUFACTURER ANALYSIS						
Theoretical PPB	(10)	(16)	(35)	(30)	(10)	(30)
1st Analysis Date	8/14/86	8/14/86	8/14/86	8/14/86	8/14/86	8/14/86
PPB	(10.1)	(10.3)	(29.7)	(25.0)	(8.42)	(31.2)
RTI ANALYSIS* **						
1st Analysis Date	2/26/87	2/26/87	2/26/87	2/26/87	2/26/87	2/26/87
PPB	(10.8 ± 0.7)	NA	NA	(30.9 ± 3.0)	(9.70 ± 0.7)	(31.5 ± 3.5)
2nd Analysis Day**	169	169	169	169	169	169
PPB	(10.2 ± 0.7)	NA	NA	(28.2 ± 2.6)	(9.73 ± 0.7)	(31.6 ± 3.7)
RTI QUALITY CONTROL** **						
1st Analysis Date	2/26/87	2/26/87	2/26/87	2/26/87	2/26/87	2/26/87
PPB	(18.8 ± 1.3)	NA	NA	(18.8 ± 1.7)	(20.1 ± 1.4)	(19.4 ± 2.1)
NBS Concen. PPB	(19.0 ± 1.0)	(7.70 ± 1.5)	(6.50 ± 1.3)	(19.8 ± 1.8)	(19.0 ± 1.2)	(19.1 ± 1.9)
2nd Analysis Day**	169	169	169	169	169	169
PPB	(20.0 ± 1.4)	NA	NA	(19.6 ± 1.8)	(20.0 ± 1.4)	(18.9 ± 2.1)
NBS Concen. PPB	(19.0 ± 1.0)	(7.70 ± 1.5)	(6.50 ± 1.3)	(19.8 ± 1.8)	(19.0 ± 1.2)	(19.1 ± 1.9)

* An NBS primary standard was used for calibration.
** Number of days after 1st RTI analysis.
*** First RTI analysis was performed using cryogenic preconcentration. Second RTI analysis was performed using automated cryogenic preconcentration with cryofocusing followed by GC/FID.
**** A different NBS primary standard was analyzed as an internal quality control on each day of RTI analysis.
NA = Not Analyzed

STABILITY STUDY FOR GROUP IV COMPOUNDS*

Cylinder IV-A2

ACTIVITY		COMPOUND					
		1,3-Butadiene	Ethylene Oxide	Propylene Oxide	Methylene Chloride	Acrylonitrile	Ortho-Xylene
MANUFACTURER ANALYSIS							
Theoretical	PPB	(30)	(35)	(15)	(10)	(30)	(10)
1st Analysis	Date	9/17/86	9/17/86	9/17/86	9/17/86	9/17/86	9/17/86
	PPB	(32.2)	(13.4)	(12.3)	(8.62)	(23.9)	(10.7)
RTI ANALYSIS* **							
1st Analysis	Date	5/07/87	5/07/87	5/07/87	5/07/87	5/07/87	5/07/87
	PPB	(27.8 ± 1.9)	NA	NA	(10.7 ± 1.0)	(20.4 ± 1.4)	(11.5 ± 1.3)
2nd Analysis	Day**	102	102	102	102	102	102
	PPB	(26.7 ± 1.8)	NA	NA	(10.8 ± 1.0)	(19.6 ± 1.4)	(11.6 ± 1.3)
RTI QUALITY CONTROL**							
1st Analysis	Date	5/07/87	5/07/87	5/07/87	5/07/87	5/07/87	5/07/87
	PPB	(21.7 ± 1.5)	NA	NA	(20.7 ± 1.9)	(20.5 ± 1.4)	(17.6 ± 1.9)
NBS Concen.	PPB	(19.0 ± 1.0)	(7.70 ± 1.5)	(6.50 ± 1.3)	(19.8 ± 1.8)	(19.0 ± 1.2)	(19.1 ± 1.9)
2nd Analysis	Day**	102	102	102	102	102	102
	PPB	(20.5 ± 1.4)	NA	NA	(21.2 ± 2.0)	(20.0 ± 1.4)	(18.4 ± 2.0)
NBS Concen.	PPB	(19.0 ± 1.0)	(7.70 ± 1.5)	(6.50 ± 1.3)	(19.8 ± 1.8)	(19.0 ± 1.2)	(19.1 ± 1.9)

* An NBS primary standard was used for calibration.

** Number of days after 1st RTI analysis.

*** First RTI analysis was performed using cryogenic preconcentration. Second RTI analysis was performed using automated cryogenic preconcentration with cryofocusing followed by GC/FID.

**** A different NBS primary standard was analyzed as an internal quality control on each day of RTI analysis.

***** Compound unstable.

NA = Not Analyzed

STABILITY STUDY FOR GROUP IV COMPOUNDS*

Cylinder IV-A3

ACTIVITY		COMPOUND					
		1,3-Butadiene	Ethylene Oxide	Propylene Oxide	Methylene Chloride	Acrylonitrile	Ortho-Xylene
MANUFACTURER ANALYSIS							
Theoretical	PPB	(10)	(15)	(15)	(10)	(10)	(10)
1st Analysis	Date	8/05/86	8/05/86	8/05/86	8/05/86	8/05/86	8/05/86
	PPB	(10.5)	(11.0)	(15.1)	(10.8)	(7.67)	(9.57)
RTI ANALYSIS* **							
1st Analysis	Date	5/04/87	5/04/87	5/04/87	5/04/87	5/04/87	5/04/87
	PPB	(10.8 ± 0.7)	NA	NA	(10.4 ± 1.0)	(10.7 ± 0.8)	(11.0 ± 1.2)
2nd Analysis	Day**	101	101	101	101	101	101
	PPB	NA	NA	NA	(11.0 ± 1.0)	(10.1 ± 0.7)	(11.5 ± 1.3)
RTI QUALITY CONTROL** **							
1st Analysis	Date	5/04/87	5/04/87	5/04/87	5/04/87	5/04/87	5/04/87
	PPB	(21.8 ± 1.5)	NA	NA	(20.6 ± 1.9)	(18.8 ± 1.3)	(18.1 ± 2.0)
NBS Concen.	PPB	(19.0 ± 1.0)	(7.70 ± 1.5)	(6.50 ± 1.3)	(19.8 ± 1.8)	(19.0 ± 1.2)	(19.1 ± 1.9)
2nd Analysis	Day**	101	101	101	101	101	101
	PPB	(20.4 ± 1.4)	NA	NA	(19.1 ± 1.8)	(19.1 ± 132)	(18.4 ± 2.0)
NBS Concen.	PPB	(19.0 ± 1.0)	(7.70 ± 1.5)	(6.50 ± 1.3)	(19.8 ± 1.8)	(19.0 ± 1.2)	(19.1 ± 1.9)

* An NBS primary standard was used for calibration.

** Number of days after 1st RTI analysis.

*** First RTI analysis was performed using cryogenic preconcentration. Second RTI analysis was performed using automated cryogenic preconcentration with cryofocusing followed by GC/FID.

**** A different NBS primary standard was analyzed as an internal quality control on each day of RTI analysis.

***** Compound unstable.

NA = Not Analyzed

STABILITY STUDY FOR GROUP IV COMPOUNDS*

Cylinder IV-A4

ACTIVITY	COMPOUND					
	1,3-Butadiene	Ethylene Oxide	Propylene Oxide	Methylene Chloride	Acrylonitrile	Ortho-Xylene
MANUFACTURER ANALYSIS						
Theoretical PPB	(10)	(16)	(37)	(32)	(11)	(32)
1st Analysis Date	8/06/86	8/06/86	8/06/86	8/06/86	8/06/86	8/06/86
PPB	(10.2)	(12.3)	(37.8)	(23.9)	(8.84)	(29.4)
RTI ANALYSIS**						
1st Analysis Date	7/20/87	7/20/87	7/20/87	7/20/87	7/20/87	7/20/87
PPB	(11.9 ± 0.8)	NA	NA	(32.8 ± 3.0)	(10.1 ± 0.7)	(33.1 ± 3.7)
2nd Analysis Day**	23	23	23	23	23	23
PPB	(11.8 ± 0.8)	NA	NA	(33.1 ± 3.1)	(10.0 ± 0.7)	(33.2 ± 3.7)
RTI QUALITY CONTROL***						
1st Analysis Date	7/20/87	7/20/87	7/20/87	7/20/87	7/20/87	7/20/87
PPB	(20.0 ± 1.4)	NA	NA	(20.0 ± 1.8)	(18.1 ± 1.3)	(18.2 ± 2.0)
NBS Concen. PPB	(19.0 ± 1.0)	(7.70 ± 1.5)	(6.50 ± 1.3)	(19.8 ± 1.8)	(19.0 ± 1.2)	(19.1 ± 1.9)
2nd Analysis Day**	23	23	23	23	23	23
PPB	(19.7 ± 1.3)	NA	NA	(18.9 ± 1.7)	(19.2 ± 1.4)	(19.4 ± 2.1)
NBS Concen. PPB	(19.0 ± 1.0)	(7.70 ± 1.5)	(6.50 ± 1.3)	(19.8 ± 1.8)	(19.0 ± 1.2)	(19.1 ± 1.9)

* An NBS primary standard was used for calibration.

** Number of days after 1st RTI analysis.

*** A different NBS primary standard was analyzed as an internal quality control on each day of RTI analysis.

**** All RTI analyses were performed using cryogenic preconcentration with cryofocusing followed by GC/FID.

NA = Not Analyzed

STABILITY STUDY FOR GROUP IV COMPOUNDS*

Cylinder IV-A5

ACTIVITY	COMPOUND					
	1,3-Butadiene	Ethylene Oxide	Propylene Oxide	Methylene Chloride	Acrylonitrile	Ortho-Xylene
MANUFACTURER ANALYSIS						
Theoretical PPB	(6006)	(6002)	(8038)	(6027)	(8037)	(8038)
1st Analysis Date	7/09/86	7/09/86	7/09/86	7/09/86	7/09/86	7/09/86
PPB	(5692)	(4827)	(7687)	(6038)	(8057)	(8378)
RTI ANALYSIS**						
1st Analysis Date	10/22/86	10/22/86	10/22/86	10/22/86	10/22/86	10/22/86
PPB	(5826 ± 220)	(6252 ± 235)	(8404 ± 318)	(6267 ± 260)	(5413 ± 310)	(9122 ± 230)
2nd Analysis Day**	91	91	91	91	91	91
PPB	(5780 ± 220)	(5430 ± 230)	(8080 ± 320)	(5930 ± 250)	(5800 ± 330)	(8440 ± 210)
3rd Analysis Day**	301	301	301	301	301	301
PPB	(5800 ± 221)	(5538 ± 240)	(8215 ± 330)	(6127 ± 270)	(5729 ± 320)	(8521 ± 220)
RTI QUALITY CONTROL***						
1st Analysis Date	10/22/86	10/22/86	10/22/86	10/22/86	10/22/86	10/22/86
PPB	(2942 ± 100)	(2878 ± 130)	(2338 ± 95)	(2214 ± 98)	(1996 ± 81)	(1975 ± 166)
NBS Concen. PPB	(2510 ± 20)	(2770 ± 80)	(2360 ± 70)	(2260 ± 80)	(2020 ± 60)	(1840 ± 180)
2nd Analysis Day**	91	91	91	91	91	91
PPB	(2500 ± 90)	(2710 ± 110)	(2380 ± 90)	(2250 ± 90)	(1990 ± 80)	(1910 ± 160)
NBS Concen. PPB	(2510 ± 20)	(2770 ± 80)	(2360 ± 70)	(2260 ± 80)	(2020 ± 60)	(1840 ± 180)
3rd Analysis Day**	301	301	301	301	301	301
PPB	(2490 ± 87)	(2730 ± 100)	(2300 ± 80)	(2225 ± 85)	(2000 ± 57)	(1880 ± 156)
NBS Concen. PPB	(2510 ± 20)	(2770 ± 80)	(2360 ± 70)	(2260 ± 80)	(2020 ± 60)	(1840 ± 180)

* An NBS primary standard was used for calibration.

** Number of days after 1st RTI analysis.

*** A different NBS primary standard was analyzed as an internal quality control on each day of RTI analysis.

**** First and 2nd analyses were performed using cryogenic preconcentration. Third RTI analysis was performed using automated cryogenic preconcentration with cryofocusing followed by GC/FID.

STABILITY STUDY FOR GROUP IV COMPOUNDS*
Cylinder IV-A6

ACTIVITY		COMPOUND					
		1,3-Butadiene	Ethylene Oxide	Propylene Oxide	Methylene Chloride	Acrylonitrile	Ortho-Xylene
MANUFACTURER ANALYSIS							
Theoretical	PPB	(30)	(20)	(20)	(30)	(10)	(30)
1st Analysis	Date	7/23/86	7/23/86	7/23/86	7/23/86	7/23/86	7/23/86
	PPB	(31.9)	(12.5)	(15.0)	(23.4)	(8.69)	(31.2)
RTI ANALYSIS****							
1st Analysis	Date	7/20/87	7/20/87	7/20/87	7/20/87	7/20/87	7/20/87
	PPB	(38.6 ± 2.6)	NA	NA	(29.5 ± 2.7)	(9.90 ± 0.7)	(31.8 ± 3.5)
2nd Analysis	Day**	22	22	22	22	22	22
	PPB	(38.2 ± 2.6)	NA	NA	(27.9 ± 2.6)	(9.00 ± 0.6)	(30.8 ± 3.4)
RTI QUALITY CONTROL***							
1st Analysis	Date	7/20/87	7/20/87	7/20/87	7/20/87	7/20/87	7/20/87
	PPB	(20.0 ± 1.4)	NA	NA	(20.0 ± 1.8)	(18.1 ± 1.3)	(18.2 ± 2.0)
NBS Concen.	PPB	(19.0 ± 1.0)	(7.70 ± 1.5)	(6.50 ± 1.3)	(19.8 ± 1.8)	(19.0 ± 1.2)	(19.1 ± 1.9)
2nd Analysis	Day**	22	22	22	22	22	22
	PPB	(19.5 ± 1.3)	NA	NA	(19.6 ± 1.8)	(19.1 ± 1.3)	(19.3 ± 2.1)
NBS Concen.	PPB	(19.0 ± 1.0)	(7.70 ± 1.5)	(6.50 ± 1.3)	(19.8 ± 1.8)	(19.0 ± 1.2)	(19.1 ± 1.9)

* An NBS primary standard was used for calibration.
** Number of days after 1st RTI analysis.
*** A different NBS primary standard was analyzed as an internal quality control on each day of RTI analysis.
**** All RTI analyses were performed using cryogenic preconcentration with cryofocusing.
NA = Not Analzyed

STABILITY STUDY FOR GROUP IV COMPOUNDS*

Cylinder IV-A7

ACTIVITY	COMPOUND					
	1,3-Butadiene	Ethylene Oxide	Propylene Oxide	Methylene Chloride	Acrylonitrile	Ortho-Xylene
MANUFACTURER ANALYSIS						
Theoretical PPB	(30)	(20)	(21)	(31)	(10)	(31)
1st Analysis Date	7/23/86	7/23/86	7/23/86	7/23/86	7/23/86	7/23/86
PPB	(32.1)	(12.9)	(16.0)	(24.6)	(8.71)	(38.7)
RTI ANALYSIS* **						
1st Analysis Date	2/20/87	2/20/87	2/20/87	2/20/87	2/20/87	2/20/87
PPB	(29.6 ± 2.0)	NA	NA	(29.7 ± 2.7)	(10.3 ± 0.7)	(34.2 ± 3.8)
2nd Analysis Day**	173	173	173	173	173	173
PPB	(30.9 ± 2.1)	NA	NA	(29.5 ± 2.7)	(10.5 ± 0.7)	(33.1 ± 3.7)
RTI QUALITY CONTROL** **						
1st Analysis Date	2/20/87	2/20/87	2/20/87	2/20/87	2/20/87	2/20/87
PPB	(18.6 ± 1.3)	NA	NA	(18.9 ± 1.7)	(19.1 ± 1.3)	(18.9 ± 2.1)
NBS Concen. PPB	(19.0 ± 1.0)	(7.70 ± 1.5)	(6.50 ± 1.3)	(19.8 ± 1.8)	(19.0 ± 1.2)	(19.1 ± 1.9)
2nd Analysis Day**	173	173	173	173	173	173
PPB	(19.7 ± 1.3)	NA	NA	(18.9 ± 1.8)	(19.2 ± 1.4)	(19.4 ± 2.1)
NBS Concen. PPB	(19.0 ± 1.0)	(7.70 ± 1.5)	(6.50 ± 1.3)	(19.8 ± 1.8)	(19.0 ± 1.2)	(19.1 ± 1.9)

* An NBS primary standard was used for calibration.

** Number of days after 1st RTI analysis.

*** First RTI analysis was performed using cryogenic preconcentration. Second RTI analysis was performed using automated cryogenic preconcentration with cryofocusing followed by GC/FID.

**** A different NBS primary standard was analyzed as an internal quality control on each day of RTI analysis.

NA = Not Analyzed

STABILITY STUDY FOR GROUP IV COMPOUNDS*

Cylinder IV-A8

ACTIVITY	COMPOUND					
	1,3-Butadiene	Ethylene Oxide	Propylene Oxide	Methylene Chloride	Acrylonitrile	Ortho-Xylene
MANUFACTURER ANALYSIS						
Theoretical PPB	(6006)	(6002)	(8014)	(6009)	(8013)	(8013)
1st Analysis Date	7/09/86	7/09/86	7/09/86	7/09/86	7/09/86	7/09/86
PPB	(5722)	(5072)	(7609)	(6068)	(8129)	(8396)
RTI ANALYSIS****						
1st Analysis Date	10/22/86	10/22/86	10/22/86	10/22/86	10/22/86	10/22/86
PPB	(5922 ± 225)	(6500 ± 260)	(8333 ± 350)	(6200 ± 249)	(8487 ± 369)	(9065 ± 725)
2nd Analysis Day**	91	91	91	91	91	91
PPB	(5890 ± 220)	(5800 ± 250)	(8120 ± 320)	(5700 ± 240)	(7860 ± 330)	(8300 ± 710)
3rd Analysis Day**	301	301	301	301	301	301
PPB	(5901 ± 210)	(6000 ± 270)	(8205 ± 330)	(5850 ± 250)	(7900 ± 335)	(8501 ± 726)
RTI QUALITY CONTROL***						
1st Analysis Date	10/22/86	10/22/86	10/22/86	10/22/86	10/22/86	10/22/86
PPB	(2942 ± 100)	(2878 ± 130)	(2338 ± 95)	(2214 ± 98)	(1996 ± 81)	(1975 ± 166)
NBS Concen. PPB	(2510 ± 20)	(2770 ± 80)	(2360 ± 70)	(2260 ± 80)	(2020 ± 60)	(1840 ± 180)
2nd Analysis Day**	91	91	91	91	91	91
PPB	(2500 ± 90)	(2710 ± 110)	(2380 ± 90)	(2250 ± 90)	(1990 ± 80)	(1910 ± 160)
NBS Concen. PPB	(2510 ± 20)	(2770 ± 80)	(2360 ± 70)	(2260 ± 80)	(2020 ± 60)	(1840 ± 180)
3rd Analysis Day**	301	301	301	301	301	301
PPB	(2490 ± 87)	(2730 ± 100)	(2300 ± 80)	(2225 ± 85)	(2000 ± 57)	(1880 ± 156)
NBS Concen. PPB	(2510 ± 20)	(2770 ± 80)	(2360 ± 70)	(2260 ± 80)	(2020 ± 60)	(1840 ± 180)

* An NBS primary standard was used for calibration.
** Number of days after 1st RTI analysis.
*** A different NBS primary standard was analyzed as an internal quality control on each day of RTI analysis.
**** First and 2nd analyses were performed using cryogenic preconcentration. Third RTI analysis was performed using automated cryogenic preconcentration with cryofocusing followed by GC/FID.

STABILITY STUDY FOR GROUP IV COMPOUNDS

Cylinder IV-A9

ACTIVITY	COMPOUND					
	1,3-Butadiene	Ethylene Oxide	Propylene Oxide	Methylene Chloride	Acrylonitrile	Ortho-Xylene
MANUFACTURER ANALYSIS						
Theoretical PPB	(30)	(20)	(20)	(30)	(10)	(30)
1st Analysis Date	7/22/86	7/22/86	7/22/86	7/22/86	7/22/86	7/22/86
PPB	(32.1)	(12.8)	(14.9)	(23.8)	(9.37)	(37.1)
RTI ANALYSIS* **						
1st Analysis Date	5/04/87	5/04/87	5/04/87	5/04/87	5/04/87	5/04/87
PPB	(30.3 ± 2.1)	NA	NA	(24.5 ± 2.3)	(10.7 ± 0.8)	(33.9 ± 3.8)
2nd Analysis Day**	102	102	102	102	102	102
PPB	(30.7 ± 2.1)	NA	NA	(24.7 ± 2.3)	(9.31 ± 0.7)	(33.7 ± 3.7)
RTI QUALITY CONTROL** **						
1st Analysis Date	5/04/87	5/04/87	5/04/87	5/04/87	5/04/87	5/04/87
PPB	(21.8 ± 1.5)	NA	NA	(20.6 ± 1.9)	(18.8 ± 1.3)	(18.1 ± 2.0)
NBS Concen. PPB	(19.0 ± 1.0)	(7.70 ± 1.5)	(6.50 ± 1.3)	(19.8 ± 1.8)	(19.0 ± 1.2)	(19.1 ± 1.9)
2nd Analysis Day**	102	102	102	102	102	102
PPB	(20.0 ± 1.4)	NA	NA	(19.6 ± 1.8)	(20.0 ± 1.4)	(18.9 ± 2.1)
NBS Concen. PPB	(19.0 ± 1.0)	(7.70 ± 1.5)	(6.50 ± 1.3)	(19.8 ± 1.8)	(19.0 ± 1.2)	(19.1 ± 1.9)

* An NBS primary standard was used for calibration.

** Number of days after 1st RTI analysis.

*** First RTI analysis was performed using cryogenic preconcentration. Second RTI analysis was performed using automated cryogenic preconcentration with cryofocusing followed by GC/FID.

**** A different NBS primary standard was analyzed as an internal quality control on each day of RTI analysis.

NA = Not Analyzed

STABILITY STUDY FOR GROUP IV COMPOUNDS*

Cylinder IV-A10

ACTIVITY	COMPOUND					
	1,3-Butadiene	Ethylene Oxide	Propylene Oxide	Methylene Chloride	Acrylonitrile	Ortho-Xylene
MANUFACTURER ANALYSIS						
Theoretical PPB	(30)	(35)	(15)	(10)	(30)	(10)
1st Analysis Date	9/16/86	9/16/86	9/16/86	9/16/86	9/16/86	9/16/86
PPB	(32.6)	(16.7)	(10.7)	(9.06)	(24.2)	(10.9)
RTI ANALYSIS* **						
1st Analysis Date	5/04/87	5/04/87	5/04/87	5/04/87	5/04/87	5/04/87
PPB	(28.4 ± 1.9)	NA	NA	(10.4 ± 1.0)	(28.2 ± 2.0)	(11.5 ± 1.3)
2nd Analysis Day**	98	98	98	98	98	98
PPB	(28.5 ± 1.9)	NA	NA	(10.4 ± 1.0)	(29.3 ± 2.1)	(11.5 ± 1.3)
RTI QUALITY CONTROL** **						
1st Analysis Date	5/04/87	5/04/87	5/04/87	5/04/87	5/04/87	5/04/87
PPB	(21.8 ± 1.5)	NA	NA	(20.6 ± 1.9)	(18.8 ± 1.3)	(18.1 ± 2.0)
NBS Concen. PPB	(19.0 ± 1.0)	(7.70 ± 1.5)	(6.50 ± 1.3)	(19.8 ± 1.8)	(19.0 ± 1.2)	(19.1 ± 1.9)
2nd Analysis Day**	98	98	98	98	98	98
PPB	(19.9 ± 1.3)	NA	NA	(19.0 ± 1.8)	(18.6 ± 1.3)	(18.9 ± 2.1)
NBS Concen. PPB	(19.0 ± 1.0)	(7.70 ± 1.5)	(6.50 ± 1.3)	(19.8 ± 1.8)	(19.0 ± 1.2)	(19.1 ± 1.9)

* An NBS primary standard was used for calibration.

** Number of days after 1st RTI analysis.

*** First RTI analysis was performed using cryogenic preconcentration. Second RTI analysis was performed using automated cryogenic preconcentration with cryofocusing followed by GC/FID.

**** A different NBS primary standard was analyzed as an internal quality control on each day of RTI analysis.

***** Compound unstable.

NA = Not Analzyed

STABILITY STUDY FOR GROUP IV COMPOUNDS*

Cylinder IV-A11

ACTIVITY	COMPOUND					
	1,3-Butadiene	Ethylene Oxide	Propylene Oxide	Methylene Chloride	Acrylonitrile	Ortho-Xylene
MANUFACTURER ANALYSIS						
Theoretical PPB	(800)	(800)	(1021)	(816)	(1020)	(1020)
1st Analysis Date	7/07/86	7/07/86	7/07/86	7/07/86	7/07/86	7/07/86
PPB	(811)	(595)	(873)	(826)	(1044)	(1069)
RTI ANALYSIS****						
1st Analysis Date	10/22/86	10/22/86	10/22/86	10/22/86	10/22/86	10/22/86
PPB	(803 ± 30)	(694 ± 28)	(917 ± 31)	(814 ± 33)	(1180 ± 62)	(1211 ± 110)
2nd Analysis Day**	91	91	91	91	91	91
PPB	(940 ± 40)	(700 ± 30)	(960 ± 40)	(840 ± 40)	(1010 ± 40)	(1090 ± 90)
3rd Analysis Day**	302	302	302	302	302	302
PPB	(923 ± 35)	(697 ± 30)	(932 ± 36)	(823 ± 36)	(1080 ± 50)	(1130 ± 98)
RTI QUALITY CONTROL***						
1st Analysis Date	10/22/86	10/22/86	10/22/86	10/22/86	10/22/86	10/22/86
PPB	(2942 ± 100)	(2878 ± 130)	(2338 ± 95)	(2214 ± 98)	(1996 ± 81)	(1975 ± 166)
NBS Concen. PPB	(2510 ± 20)	(2770 ± 80)	(2360 ± 70)	(2260 ± 80)	(2020 ± 60)	(1840 ± 180)
2nd Analysis Day**	91	91	91	91	91	91
PPB	(2500 ± 90)	(2710 ± 110)	(2380 ± 90)	(2250 ± 90)	(1990 ± 80)	(1910 ± 160)
NBS Concen. PPB	(2510 ± 20)	(2770 ± 80)	(2360 ± 70)	(2260 ± 80)	(2020 ± 60)	(1840 ± 180)
3rd Analysis Day**	302	302	302	302	302	302
PPB	(2496 ± 86)	(2720 ± 112)	(2350 ± 70)	(2245 ± 88)	(2000 ± 82)	(1900 ± 155)
NBS Concen. PPB	(2510 ± 20)	(2770 ± 80)	(2360 ± 70)	(2260 ± 80)	(2020 ± 60)	(1840 ± 180)

* An NBS primary standard was used for calibration.

** Number of days after 1st RTI analysis.

*** A different NBS primary standard was analyzed as an internal quality control on each day of RTI analysis.

**** First and 2nd analyses were performed using cryogenic preconcentration. Third RTI analysis was performed using automated cryogenic preconcentration with cryofocusing followed by GC/FID.

STABILITY STUDY FOR GROUP IV COMPOUNDS*

Cylinder IV-A12

ACTIVITY		COMPOUND					
		1,3-Butadiene	Ethylene Oxide	Propylene Oxide	Methylene Chloride	Acrylonitrile	Ortho-Xylene
MANUFACTURER ANALYSIS							
Theoretical	PPB	(2000)	(2000)	(2987)	(1991)	(2984)	(2988)
1st Analysis	Date	7/08/86	7/08/86	7/08/86	7/08/86	7/08/86	7/08/86
	PPB	(1995)	(1564)	(2520)	(1977)	(2951)	(2932)
RTI ANALYSIS**							
1st Analysis	Date	10/22/86	10/22/86	10/22/86	10/22/86	10/22/86	10/22/86
	PPB	(2040 ± 71)	(1848 ± 86)	(2759 ± 111)	(1999 ± 110)	(2961 ± 120)	(3358 ± 240)
2nd Analysis	Day**	91	91	91	91	91	91
	PPB	(2070 ± 80)	(1790 ± 80)	(2750 ± 110)	(1890 ± 80)	(2960 ± 120)	(3540 ± 300)
3rd Analysis	Day**	302	302	302	302	302	302
	PPB	(2060 ± 75)	(1805 ± 81)	(2752 ± 110)	(1920 ± 85)	(2958 ± 120)	(3480 ± 260)
RTI QUALITY CONTROL***							
1st Analysis	Date	10/22/86	10/22/86	10/22/86	10/22/86	10/22/86	10/22/86
	PPB	(2942 ± 100)	(2878 ± 130)	(2338 ± 95)	(2214 ± 98)	(1996 ± 81)	(1975 ± 166)
NBS Concen.	PPB	(2510 ± 20)	(2770 ± 80)	(2360 ± 70)	(2260 ± 80)	(2020 ± 60)	(1840 ± 180)
2nd Analysis	Day**	91	91	91	91	91	91
	PPB	(2500 ± 90)	(2710 ± 110)	(2380 ± 90)	(2250 ± 90)	(1990 ± 80)	(1910 ± 160)
NBS Concen.	PPB	(2510 ± 20)	(2770 ± 80)	(2360 ± 70)	(2260 ± 80)	(2020 ± 60)	(1840 ± 180)
3rd Analysis	Day**	302	302	302	302	302	302
	PPB	(2496 ± 86)	(2720 ± 112)	(2350 ± 70)	(2245 ± 88)	(2000 ± 82)	(1900 ± 155)
NBS Concen.	PPB	(2510 ± 20)	(2770 ± 80)	(2360 ± 70)	(2260 ± 80)	(2020 ± 60)	(1840 ± 180)

* An NBS primary standard was used for calibration.

** Number of days after 1st RTI analysis.

*** A different NBS primary standard was analyzed as an internal quality control on each day of RTI analysis.

**** First and 2nd analyses were performed using cryogenic preconcentration. Third RTI analysis was performed using automated cryogenic preconcentration with cryofocusing followed by GC/FID.

STABILITY STUDY FOR GROUP IV COMPOUNDS*

Cylinder IV-A13

ACTIVITY	COMPOUND					
	1,3-Butadiene	Ethylene Oxide	Propylene Oxide	Methylene Chloride	Acrylonitrile	Ortho-Xylene
MANUFACTURER ANALYSIS						
Theoretical PPB	(1997)	(2002)	(3027)	(2017)	(3024)	(3028)
1st Analysis Date	7/08/86	7/08/86	7/08/86	7/08/86	7/08/86	7/08/86
PPB	(1960)	(1546)	(2678)	(1998)	(3048)	(3257)
RTI ANALYSIS**						
1st Analysis Date	10/22/86	10/22/86	10/22/86	10/22/86	10/22/86	10/22/86
PPB	(2019 ± 80)	(1889 ± 120)	(3012 ± 125)	(1987 ± 90)	(2973 ± 125)	(3388 ± 270)
2nd Analysis Day**	91	91	91	91	91	91
PPB	(2020 ± 80)	(1760 ± 80)	(2770 ± 110)	(1910 ± 80)	(2940 ± 120)	(3480 ± 300)
3rd Analysis Day**	302	302	302	302	302	302
PPB	(2018 ± 79)	(1800 ± 82)	(2790 ± 112)	(1923 ± 81)	(2960 ± 123)	(3390 ± 289)
RTI QUALITY CONTROL***						
1st Analysis Date	10/22/86	10/22/86	10/22/86	10/22/86	10/22/86	10/22/86
PPB	(2942 ± 100)	(2878 ± 130)	(2338 ± 95)	(2214 ± 98)	(1996 ± 81)	(1975 ± 166)
NBS Concen. PPB	(2510 ± 20)	(2770 ± 80)	(2360 ± 70)	(2260 ± 80)	(2020 ± 60)	(1840 ± 180)
2nd Analysis Day**	91	91	91	91	91	91
PPB	(2500 ± 90)	(2710 ± 110)	(2380 ± 90)	(2250 ± 90)	(1990 ± 80)	(1910 ± 160)
NBS Concen. PPB	(2510 ± 20)	(2770 ± 80)	(2360 ± 70)	(2260 ± 80)	(2020 ± 60)	(1840 ± 180)
3rd Analysis Day**	302	302	302	302	302	302
PPB	(2496 ± 86)	(2720 ± 112)	(2350 ± 70)	(2245 ± 88)	(2000 ± 82)	(1900 ± 155)
NBS Concen. PPB	(2510 ± 20)	(2770 ± 80)	(2360 ± 70)	(2260 ± 80)	(2020 ± 60)	(1840 ± 180)

* An NBS primary standard was used for calibration.

** Number of days after 1st RTI analysis.

*** A different NBS primary standard was analyzed as an internal quality control on each day of RTI analysis.

**** First and 2nd analyses were performed using cryogenic preconcentration. Third RTI analysis was performed using automated cryogenic preconcentration with cryofocusing followed by GC/FID.

STABILITY STUDY FOR GROUP IV COMPOUNDS*

Cylinder IV-A14

ACTIVITY	COMPOUND					
	1,3-Butadiene	Ethylene Oxide	Propylene Oxide	Methylene Chloride	Acrylonitrile	Ortho-Xylene
MANUFACTURER ANALYSIS						
Theoretical PPB	(10)	(16)	(36)	(31)	(10)	(31)
1st Analysis Date	8/13/86	8/13/86	8/13/86	8/13/86	8/13/86	8/13/86
PPB	(9.51)	(12.9)	(37.5)	(27.8)	(10.4)	(36.1)
RTI ANALYSIS* **						
1st Analysis Date	5/07/87	5/07/87	5/07/87	5/07/87	5/07/87	5/07/87
PPB	(12.3 ± 0.8)	NA	NA	(30.9 ± 2.9)	(11.7 ± 0.8)	(31.0 ± 3.4)
2nd Analysis Day**	102	102	102	102	102	102
PPB	(12.3 ± 0.8)	NA	(9.74 ± 2.3)	(27.6 ± 2.5)	(10.0 ± 0.7)	(34.2 ± 3.7)
RTI QUALITY CONTROL** **						
1st Analysis Date	5/07/87	5/07/87	5/07/87	5/07/87	5/07/87	5/07/87
PPB	(20.0 ± 1.5)	NA	NA	(20.7 ± 1.9)	(20.5 ± 1.4)	(17.6 ± 1.9)
NBS Concen. PPB	(19.0 ± 1.0)	(7.70 ± 1.5)	(6.50 ± 1.3)	(19.8 ± 1.8)	(19.0 ± 1.2)	(19.1 ± 1.9)
2nd Analysis Day**	102	102	102	102	102	102
PPB	(20.5 ± 1.4)	NA	NA	(21.2 ± 2.0)	(20.0 ± 1.4)	(18.4 ± 2.0)
NBS Concen. PPB	(19.0 ± 1.0)	(7.70 ± 1.5)	(6.50 ± 1.3)	(19.8 ± 1.8)	(19.0 ± 1.2)	(19.1 ± 1.9)

* An NBS primary standard was used for calibration.

** Number of days after 1st RTI analysis.

*** First RTI analysis was performed using cryogenic preconcentration. Second RTI analysis was performed using automated cryogenic preconcentration with cryofocusing.

**** A different NBS primary standard was analyzed as an internal quality control on each day of RTI analysis.

NA = Not Analyzed

STABILITY STUDY FOR GROUP IV COMPOUNDS
Cylinder IV-A15

ACTIVITY		COMPOUND					
		1,3-Butadiene	Ethylene Oxide	Propylene Oxide	Methylene Chloride	Acrylonitrile	Ortho-Xylene
MANUFACTURER ANALYSIS							
Theoretical	PPB	(10)	(20)	(20)	(10)	(10)	(10)
1st Analysis	Date	8/28/86	8/28/86	8/28/86	8/28/86	8/28/86	8/28/86
	PPB	(10.3)	(14.5)	(17.8)	(12.6)	(8.22)	(8.84)
RTI ANALYSIS****							
1st Analysis	Date	7/20/87	7/20/87	7/20/87	7/20/87	7/20/87	7/20/87
	PPB	(12.3 ± 0.8)	NA	NA	(11.4 ± 1.1)	(9.95 ± 0.7)	(11.4 ± 1.3)
2nd Analysis	Day**	28	28	28	28	28	28
	PPB	(12.0 ± 0.8)	NA	NA	(10.4 ± 1.0)	(9.93 ± 0.7)	(11.2 ± 1.2)
RTI QUALITY CONTROL***							
1st Analysis	Date	7/20/87	7/20/87	7/20/87	7/20/87	7/20/87	7/20/87
	PPB	(20.0 ± 1.4)	NA	NA	(20.0 ± 1.8)	(18.1 ± 1.3)	(18.2 ± 2.0)
NBS Concen.	PPB	(19.0 ± 1.0)	(7.70 ± 1.5)	(6.50 ± 1.3)	(19.8 ± 1.8)	(19.0 ± 1.2)	(19.1 ± 1.9)
2nd Analysis	Day**	28	28	28	28	28	28
	PPB	(20.5 ± 1.4)	NA	NA	(21.2 ± 2.0)	(20.0 ± 1.4)	(18.4 ± 2.0)
NBS Concen.	PPB	(19.0 ± 1.0)	(7.70 ± 1.5)	(6.50 ± 1.3)	(19.8 ± 1.8)	(19.0 ± 1.2)	(19.1 ± 1.9)

* An NBS primary standard was used for calibration.
** Number of days after 1st RTI analysis.
*** A different NBS primary standard was analyzed as an internal quality control on each day of RTI analysis.
**** All RTI analyses were performed using cryogenic preconcentration with cryofocusing followed by GC/FID.
***** Compound unstable.
NA = Not Analzyed

STABILITY STUDY FOR GROUP IV COMPOUNDS*

Cylinder IV-A16

ACTIVITY		COMPOUND					
		1,3-Butadiene	Ethylene Oxide	Propylene Oxide	Methylene Chloride	Acrylonitrile	Ortho-Xylene
MANUFACTURER ANALYSIS							
Theoretical	PPB	(30)	(35)	(15)	(10)	(30)	(10)
1st Analysis	Date	9/16/86	9/16/86	9/16/86	9/16/86	9/16/86	9/16/86
	PPB	(31.4)	(25.2)	(13.3)	(8.60)	(25.3)	(10.3)
RTI ANALYSIS* **							
1st Analysis	Date	2/20/87	2/20/87	2/20/87	2/20/87	2/20/87	2/20/87
	PPB	(29.4 ± 2.0)	NA	NA	(11.7 ± 1.1)	(20.6 ± 1.5)	(9.20 ± 1.0)
2nd Analysis	Day**	171	171	171	171	171	171
	PPB	NA	NA	NA	(11.2 ± 1.0)	NA	NA
RTI QUALITY CONTROL**							
1st Analysis	Date	2/20/87	2/20/87	2/20/87	2/20/87	2/20/87	2/20/87
	PPB	(18.6 ± 1.3)	NA	NA	(18.9 ± 1.7)	(19.1 ± 1.3)	(18.9 ± 2.1)
NBS Concen.	PPB	(19.0 ± 1.0)	(7.70 ± 1.5)	(6.50 ± 1.3)	(19.8 ± 1.8)	(19.0 ± 1.2)	(19.1 ± 1.9)
2nd Analysis	Day**	171	171	171	171	171	171
	PPB	(19.9 ± 1.3)	NA	NA	(19.0 ± 1.8)	(18.6 ± 1.3)	(18.9 ± 2.1)
NBS Concen.	PPB	(19.0 ± 1.0)	(7.70 ± 1.5)	(6.50 ± 1.3)	(19.8 ± 1.8)	(19.0 ± 1.2)	(19.1 ± 1.9)

* An NBS primary standard was used for calibration.

** Number of days after 1st RTI analysis.

*** First RTI analysis was performed using cryogenic preconcentration. Second RTI analysis was performed using automated cryogenic preconcentration with cryofocusing followed by GC/FID.

**** A different NBS primary standard was analyzed as an internal quality control on each day of RTI analysis.

***** Compound unstable.

NA = Not Analyzed

STABILITY STUDY FOR GROUP IV COMPOUNDS*

Cylinder IV-A17

ACTIVITY		COMPOUND					
		1,3-Butadiene	Ethylene Oxide	Propylene Oxide	Methylene Chloride	Acrylonitrile	Ortho-Xylene
MANUFACTURER ANALYSIS							
Theoretical	PPB	(10)	(20)	(20)	(10)	(10)	(10)
1st Analysis	Date	7/24/86	7/24/86	7/24/86	7/24/86	7/24/86	7/24/86
	PPB	(9.91)	(14.4)	(16.8)	(10.2)	(7.46)	(8.24)
RTI ANALYSIS* **							
1st Analysis	Date	5/04/87	5/04/87	5/04/87	5/04/87	5/04/87	5/04/87
	PPB	(12.0 ± 0.8)	NA	NA	(10.9 ± 1.0)	(10.0 ± 0.7)	(11.9 ± 1.3)
2nd Analysis	Day**	99	99	99	99	99	99
	PPB	(12.6 ± 0.9)	NA	NA	(10.7 ± 1.0)	(9.9 ± 0.7)	(11.2 ± 1.2)
RTI QUALITY CONTROL** **							
1st Analysis	Date	5/04/87	5/04/87	5/04/87	5/04/87	5/04/87	5/04/87
	PPB	(21.8 ± 1.5)	NA	NA	(20.6 ± 1.9)	(18.8 ± 1.3)	(18.1 ± 2.0)
NBS Concen.	PPB	(19.0 ± 1.0)	(7.70 ± 1.5)	(6.50 ± 1.3)	(19.8 ± 1.8)	(19.0 ± 1.2)	(19.1 ± 1.9)
2nd Analysis	Day**	99	99	99	99	99	99
	PPB	(19.5 ± 1.3)	NA	NA	(19.6 ± 1.8)	(19.1 ± 1.3)	(19.3 ± 2.1)
NBS Concen.	PPB	(19.0 ± 1.0)	(7.70 ± 1.5)	(6.50 ± 1.3)	(19.8 ± 1.8)	(19.0 ± 1.2)	(19.1 ± 1.9)

* An NBS primary standard was used for calibration.

** Number of days after 1st RTI analysis.

*** First RTI analysis was performed using cryogenic preconcentration. Second RTI analysis was performed using automated cryogenic preconcentration with cryofocusing followed by GC/FID.

**** A different NBS primary standard was analyzed as an internal quality control on each day of RTI analysis.

NA = Not Analyzed

STABILITY STUDY FOR GROUP V COMPOUNDS*
Cylinder V-A1

ACTIVITY		COMPOUND								
		Vinyl Chloride	Chloroform	Carbon Tetrachloride	Methylene Chloride	1,2-Dichloro-ethane	Trichloro-ethylene	Benzene	Tetrachloro-ethylene	1,3-Butadiene
MANUFACTURER ANALYSIS										
Theoretical	PPB	(5.00)	(5.00)	(5.00)	(5.00)	(5.00)	(5.00)	(5.00)	(5.00)	(5.00)
1st Analysis	Date	2/19/87	2/19/87	12/23/86	2/19/87	2/19/87	2/19/87	2/19/87	2/19/87	2/19/87
	PPB	(4.55)	(5.04)	(4.10)	(4.89)	(5.24)	(5.70)	(4.32)	(5.69)	(5.31)
2nd Analysis	Date	3/19/87	3/19/87	3/25/87	3/19/87	3/19/87	3/19/87	3/19/87	3/19/87	3/19/87
	PPB	(4.12)	(5.13)	(3.80)	(4.99)	(5.47)	(6.07)	(4.52)	(5.80)	(3.99)
RTI ANALYSIS****										
1st Analysis	Date	6/30/87	6/30/87	6/30/87	6/30/87	6/30/87	6/30/87	6/30/87	6/30/87	6/30/87
	PPB	(5.15 ± 0.3)	(4.77 ± 0.3)	(4.9 ± 0.3)	(4.97 ± 0.6)	(4.87 ± 0.3)	(5.47 ± 0.3)	(4.08 ± 0.2)	(5.06 ± 0.4)	(5.84 ± 0.6)
2nd Analysis	Day**	49	49	49	49	49	49	49	49	49
	PPB	NA	(4.95 ± 0.3)	(4.67 ± 0.3)	(5.00 ± 0.6)	(4.90 ± 0.3)	(5.61 ± 0.4)	(4.18 ± 0.3)	(5.02 ± 0.3)	(5.02 ± 0.5)
RTI QUALITY CONTROL***										
1st Analysis	Date	6/30/87	6/30/87	6/30/87	6/30/87	6/30/87	6/30/87	6/30/87	6/30/87	6/30/87
	PPB	(9.48 ± 0.6)	(10.6 ± 0.7)	(10.6 ± 0.7)	(10.6 ± 1.2)	(10.0 ± 0.6)	(10.4 ± 0.7)	(8.92 ± 0.5)	(9.89 ± 0.7)	NA
NBS Concen.	PPB	(9.69 ± 0.5)	(10.8 ± 0.5)	(10.9 ± 0.6)	(10.6 ± 1.1)	(9.95 ± 0.5)	(10.5 ± 0.5)	(9.36 ± 0.5)	(9.96 ± 0.5)	(8.76 ± 0.9)
2nd Analysis	Day	49	49	49	49	49	49	49	49	49
	PPB	NA	(10.7 ± 0.7)	(10.7 ± 0.7)	(10.6 ± 1.2)	(10.6 ± 0.6)	(10.4 ± 0.7)	(9.00 ± 0.5)	(9.93 ± 0.7)	NA
NBS Concen.	PPB	(9.69 ± 0.5)	(10.8 ± 0.5)	(10.9 ± 0.6)	(10.6 ± 1.1)	(9.95 ± 0.5)	(10.5 ± 0.5)	(9.36 ± 0.5)	(9.96 ± 0.5)	(8.76 ± 0.9)

(Continued)

*Calibration was performed using an NBS primary standard.

**Number of days after 1st RTI analysis.

***A different NBS primary standard was analyzed as internal quality control on each day of RTI analysis.

****All analyses were performed using automated cryogenic preconcentration with cryofocusing followed by GC/FID.

"NA" - Not Analyzed

STABILITY STUDY FOR GROUP V COMPOUNDS* (Continued)
Cylinder V-A1

ACTIVITY		COMPOUND								
		Bromomethane	Trichloro-fluoromethane	1,1,1-Tri-chloroethane	1,2-Dichloro-propane	1,2-Dibromo-ethane	Toluene	Chloro-benzene	Ethyl-benzene	o-Xylene
MANUFACTURER ANALYSIS										
Theoretical	PPB	(5.00)	(5.00)	(5.00)	(5.00)	(5.00)	(5.00)	(5.00)	(5.00)	(5.00)
1st Analysis	Date	2/19/87	12/23/86	2/19/87	2/19/87	2/19/87	2/19/87	2/19/87	2/19/87	2/19/87
	PPB	(4.85)	(4.72)	(5.20)	(5.57)	(6.25)	(5.19)	(5.85)	(5.59)	(6.20)
2nd Analysis	Date	3/19/87	3/25/87	3/19/87	3/19/87	3/19/87	3/19/87	3/19/87	3/19/87	3/19/87
	PPB	(4.78)	(4.69)	(5.12)	(5.73)	(6.18)	(5.41)	(5.98)	(5.57)	(5.91)
RTI ANALYSIS****										
1st Analysis	Date	6/30/87	6/30/87	6/30/87	6/30/87	6/30/87	6/30/87	6/30/87	6/30/87	6/30/87
	PPB	(5.32 ± 0.6)	(5.23 ± 0.6)	(4.81 ± 0.3)	(4.87 ± 0.3)	(4.79 ± 0.3)	(4.74 ± 0.3)	(4.89 ± 0.3)	(4.46 ± 0.25)	(5.02 ± 0.3)
2nd Analysis	Day**	49	49	49	49	49	49	49	49	49
	PPB	(5.42 ± 0.6)	(4.92 ± 0.5)	(4.67 ± 0.3)	(4.81 ± 0.3)	(4.84 ± 0.4)	(4.60 ± 0.3)	(4.91 ± 0.3)	(4.81 ± 0.3)	(5.10 ± 0.3)
RTI QUALITY CONTROL***										
1st Analysis	Day	6/30/87	6/30/87	6/30/87	6/30/87	6/30/87	6/30/87	6/30/87	6/30/87	6/30/87
	PPB	(9.72 ± 1.0)	(8.70 ± 1.0)	(10.1 ± 0.6)	(10.5 ± 0.6)	(9.52 ± 0.6)	(9.98 ± 0.6)	(9.58 ± 0.6)	(9.56 ± 0.5)	(9.65 ± 0.5)
NBS Concen.	PPB	(10.6 ± 1.0)	(9.39 ± 0.9)	(10.2 ± 0.5)	(10.6 ± 0.5)	(9.92 ± 0.5)	(10.0 ± 0.5)	(9.80 ± 0.5)	(10.1 ± 0.5)	(9.96 ± 0.5)
2nd Analysis	Day	49	49	49	49	49	49	49	49	49
	PPB	(9.68 ± 1.0)	(8.65 ± 1.0)	(10.1 ± 0.6)	(10.4 ± 0.6)	(9.48 ± 0.6)	(10.0 ± 0.6)	(9.62 ± 0.6)	(9.63 ± 0.5)	(9.72 ± 0.5)
NBS Concen.	PPB	(10.6 ± 1.0)	(9.39 ± 0.9)	(10.2 ± 0.5)	(10.6 ± 0.5)	(9.92 ± 0.5)	(10.0 ± 0.5)	(9.80 ± 0.5)	(10.1 ± 0.5)	(9.96 ± 0.5)

*Calibration was performed using an NBS primary standard.
**Number of days after 1st RTI analysis.
***A different NBS primary standard was analyzed as internal quality control on each day of RTI analysis.
****All analyses were performed using automated cryogenic preconcentration with cryofocusing followed by GC/FID.
"NA" - Not Analyzed

STABILITY STUDY FOR GROUP V COMPOUNDS*
Cylinder V-A2

ACTIVITY		COMPOUND								
		Vinyl Chloride	Chloroform	Carbon Tetrachloride	Methylene Chloride	1,2-Dichloro-ethane	Trichloro-ethylene	Benzene	Tetrachloro-ethylene	1,3-Butadiene
MANUFACTURER ANALYSIS										
Theoretical	PPB	(5.00)	(5.00)	(5.00)	(5.00)	(5.00)	(5.00)	(5.00)	(5.00)	(5.00)
1st Analysis	Date	2/23/87	2/23/87	12/23/86	2/23/87	2/23/87	2/23/87	2/23/87	2/23/87	2/23/87
	PPB	(4.46)	(5.29)	(4.47)	(5.12)	(5.35)	(5.89)	(4.54)	(5.51)	(5.16)
2nd Analysis	Date	3/23/87	3/23/87	3/25/87	3/23/87	3/23/87	3/23/87	3/23/87	3/23/87	3/23/87
	PPB	(5.08)	(5.10)	(4.21)	(5.19)	(5.71)	(5.52)	(4.76)	(5.81)	(5.64)
RTI ANALYSIS**										
1st Analysis	Date	6/30/87	6/30/87	6/30/87	6/30/87	6/30/87	6/30/87	6/30/87	6/30/87	6/30/87
	PPB	(5.13 ± 0.3)	(4.95 ± 0.3)	(4.72 ± 0.3)	(5.10 ± 0.6)	(5.16 ± 0.3)	(5.85 ± 0.4)	(4.14 ± 0.2)	(5.22 ± 0.4)	(5.53 ± 0.6)
2nd Analysis	Day**	49	49	49	49	49	49	49	49	49
	PPB	(5.28 ± 0.3)	(5.10 ± 0.3)	(5.00 ± 0.3)	(5.16 ± 0.6)	(5.21 ± 0.3)	(5.83 ± 0.4)	(4.23 ± 0.3)	(5.21 ± 0.4)	(5.75 ± 0.6)
RTI QUALITY CONTROL***										
1st Analysis	Date	6/30/87	6/30/87	6/30/87	6/30/87	6/30/87	6/30/87	6/30/87	6/30/87	6/30/87
	PPB	(9.48 ± 0.6)	(10.6 ± 0.7)	(10.6 ± 0.7)	(10.6 ± 1.2)	(10.0 ± 0.6)	(10.4 ± 0.7)	(8.92 ± 0.5)	(9.89 ± .07)	NA
NBS Concen.	PPB	(9.69 ± 0.5)	(10.8 ± 0.5)	(10.9 ± 0.6)	(10.6 ± 1.1)	(9.95 ± 0.5)	(10.5 ± 0.5)	(9.36 ± 0.5)	(9.96 ± 0.5)	(8.76 ± 0.9)
2nd Analysis	Day	49	49	49	49	49	49	49	49	49
	PPB	NA	(10.7 ± 0.7)	(10.7 ± 0.7)	(10.6 ± 1.2)	(9.95 ± 0.6)	(10.4 ± 0.7)	(9.00 ± 0.5)	(9.93 ± 0.7)	NA
NBS Concen.	PPB	(9.69 ± 0.5)	(10.8 ± 0.5)	(10.9 ± 0.6)	(10.6 ± 1.1)	(9.95 ± 0.5)	(10.5 ± 0.5)	(9.36 ± 0.5)	(9.96 ± 0.5)	(8.76 ± 0.9)

(Continued)

*Calibration was performed using an NBS primary standard.
**Number of days after 1st RTI analysis.
***A different NBS primary standard was analyzed as internal quality control on each day of RTI analysis.
****All analyses were performed using automated cryogenic preconcentration with cryofocusing followed by GC/FID.
"NA" - Not Analyzed

STABILITY STUDY FOR GROUP V COMPOUNDS* (Continued)
Cylinder V-A2

ACTIVITY		COMPOUND								
		Bromomethane	Trichloro-fluoromethane	1,1,1-Tri-chloroethane	1,2-Dichloro-propane	1,2-Dibromo-ethane	Toluene	Chloro-benzene	Ethyl-benzene	o-Xylene
MANUFACTURER ANALYSIS										
Theoretical	PPB	(5.00)	(5.00)	(5.00)	(5.00)	(5.00)	(5.00)	(5.00)	(5.00)	(5.00)
1st Analysis	Date	2/23/87	12/23/86	2/23/87	2/23/87	2/23/87	2/23/87	2/23/87	2/23/87	2/23/87
	PPB	(5.46)	(4.49)	(5.08)	(5.52)	(6.24)	(5.14)	(5.74)	(5.24)	(5.58)
2nd Analysis	Date	3/23/87	3/25/87	3/23/87	3/23/87	3/23/87	3/23/87	3/23/87	3/23/87	3/23/87
	PPB	(5.64)	(4.75)	(5.86)	(5.43)	(6.17)	(5.48)	(6.08)	(5.60)	(6.00)
RTI ANALYSIS**										
1st Analysis	Date	6/30/87	6/30/87	6/30/87	6/30/87	6/30/87	6/30/87	6/30/87	6/30/87	6/30/87
	PPB	(5.68 ± 0.6)	(4.44 ± 0.5)	(5.10 ± 0.3)	(5.24 ± 0.3)	(5.24 ± 0.3)	(5.01 ± 0.3)	(5.20 ± 0.3)	(4.66 ± 0.3)	(5.25 ± 0.3)
2nd Analysis	Day**	49	49	49	49	49	49	49	49	49
	PPB	(5.73 ± 0.6)	(4.86 ± 0.6)	(5.20 ± 0.3)	(5.30 ± 0.3)	(5.16 ± 0.3)	(5.07 ± 0.3)	(5.20 ± 0.3)	(4.79 ± 0.3)	(5.10 ± 0.3)
RTI QUALITY CONTROL***										
1st Analysis	Day	6/30/87	6/30/87	6/30/87	6/30/87	6/30/87	6/30/87	6/30/87	6/30/87	6/30/87
	PPB	(9.72 ± 1.0)	(8.70 ± 1.0)	(10.1 ± 0.6)	(10.5 ± 0.6)	(9.52 ± 0.6)	(9.98 ± 0.6)	(9.58 ± 0.6)	(9.56 ± 0.5)	(9.65 ± 0.5)
NBS Concen.	PPB	(10.6 ± 1.0)	(9.39 ± 0.9)	(10.2 ± 0.5)	(10.6 ± 0.5)	(9.92 ± 0.5)	(10.0 ± 0.5)	(9.80 ± 0.5)	(10.1 ± 0.5)	(9.96 ± 0.5)
2nd Analysis	Day	49	49	49	49	49	49	49	49	49
	PPB	(9.68 ± 1.0)	(8.65 ± 1.0)	(10.1 ± 0.6)	(10.4 ± 0.6)	(9.48 ± 0.6)	(10.0 ± 0.6)	(9.62 ± 0.6)	(9.63 ± 0.5)	(9.72 ± 0.5)
NBS Concen.	PPB	(10.6 ± 1.0)	(9.39 ± 0.9)	(10.2 ± 0.5)	(10.6 ± 0.5)	(9.92 ± 0.5)	(10.0 ± 0.5)	(9.80 ± 0.5)	(10.1 ± 0.5)	(9.9 ± 0.5)

*Calibration was performed using an NBS primary standard.
**Number of days after 1st RTI analysis.
***A different NBS primary standard was analyzed as internal quality control on each day of RTI analysis.
****All analyses were performed using automated cryogenic preconcentration with cryofocusing followed by GC/FID.
"NA" - Not Analyzed

STABILITY STUDY FOR GROUP V COMPOUNDS*
Cylinder V-A3

ACTIVITY		COMPOUND								
		Vinyl Chloride	Chloroform	Carbon Tetrachloride	Methylene Chloride	1,2-Dichloro-ethane	Trichloro-ethylene	Benzene	Tetrachloro-ethylene	1,3-Butadiene
MANUFACTURER ANALYSIS										
Theoretical	PPB	(5.00)	(5.00)	(5.00)	(5.00)	(5.00)	(5.00)	(5.00)	(5.00)	(5.00)
1st Analysis	Date	2/17/87	2/17/87	1/27/87	2/17/87	2/17/87	2/17/87	2/17/87	2/17/87	2/17/87
	PPB	(4.91)	(5.12)	(4.36)	(5.38)	(5.39)	(5.34)	(5.13)	(5.75)	(5.77)
2nd Analysis	Date	3/17/87	3/17/87	3/25/87	3/17/87	3/17/87	3/17/87	3/17/87	3/17/87	3/17/87
	PPB	(5.21)	(4.61)	(4.01)	(4.91)	(4.72)	(4.80)	(4.84)	(4.71)	(5.85)
RTI ANALYSIS**										
1st Analysis	Date	7/1/87	7/1/87	7/1/87	7/1/87	7/1/87	7/1/87	7/1/87	7/1/87	7/1/87
	PPB	(4.98 ± 0.3)	(4.92 ± 0.3)	(4.96 ± 0.3)	(5.21 ± 0.6)	(5.03 ± 0.3)	(5.44 ± 0.3)	(4.78 ± 0.3)	(5.16 ± 0.4)	(6.00 ± 0.7)
2nd Analysis	Day**	50	50	50	50	50	50	50	50	50
	PPB	(5.33 ± 0.3)	(4.85 ± 0.3)	(4.99 ± 0.3)	(5.12 ± 0.6)	(4.86 ± 0.3)	(5.47 ± 0.3)	(4.88 ± 03)	(5.13 ± 0.4)	NA
RTI QUALITY CONTROL***										
1st Analysis	Date	7/1/87	7/1/87	7/1/87	7/1/87	7/1/87	7/1/87	7/1/87	7/1/87	7/1/87
	PPB	(9.40 ± 0.6)	(10.5 ± 0.8)	(10.4 ± 0.7)	(10.6 ± 1.2)	(10.2 ± 0.6)	(10.5 ± 0.7)	(8.96 ± 0.5)	(10.1 ± 0.7)	NA
NBS Concen.	PPB	(9.69 ± 0.5)	(10.8 ± 0.5)	(10.9 ± 0.6)	(10.6 ± 1.1)	(9.95 ± 0.5)	(10.5 ± 0.5)	(9.36 ± 0.5)	(9.96 ± 0.5)	(8.76 ± 0.9)
2nd Analysis	Day	50	50	50	50	50	50	50	50	50
	PPB	(9.45 ± 0.6)	(10.6 ± 0.7)	(10.5 ± 0.7)	(10.6 ± 1.2)	(9.94 ± 0.6)	(10.04 ± 0.7)	(9.03 ± 0.5)	(9.85 ± 0.7)	(8.40 ± 0.9)
NBS Concen.	PPB	(9.69 ± 0.5)	(10.8 ± 0.5)	(10.9 ± 0.6)	(10.6 ± 1.1)	(9.95 ± 0.5)	(10.5 ± 0.5)	(9.36 ± 0.5)	(9.96 ± 0.5)	(8.76 ± 0.9)

*Calibration was performed using an NBS primary standard.

(Continued)

**Number of days after 1st RTI analysis.

***A different NBS primary standard was analyzed as internal quality control on each day of RTI analysis.

****All analyses were performed using automated cryogenic preconcentration with cryofocusing followed by GC/FID.

"NA" - Not Analyzed

STABILITY STUDY FOR GROUP V COMPOUNDS* (Continued)
Cylinder V-A3

ACTIVITY		COMPOUND								
		Bromomethane	Trichloro-fluoromethane	1,1,1-Tri-chloroethane	1,2-Dichloro-propane	1,2-Dibromo-ethane	Toluene	Chloro-benzene	Ethyl-benzene	o-Xylene
MANUFACTURER ANALYSIS										
Theoretical	PPB	(10.0)	(10.0)	(10.0)	(10.0)	(10.0)	(10.0)	(10.0)	(10.0)	(10.0)
1st Analysis	Date	2/17/87	1/27/87	2/17/87	2/17/87	2/17/87	2/17/87	2/17/87	2/17/87	2/17/87
	PPB	(9.41)	(9.41)	(10.9)	(11.6)	(12.8)	(10.2)	(12.0)	(11.1)	(14.3)
2nd Analysis	Date	3/17/87	3/25/87	3/17/87	3/17/87	3/17/87	3/17/87	3/17/87	3/17/87	3/17/87
	PPB	(9.47)	(10.8)	(11.2)	(10.5)	(10.4)	(8.80)	(9.39)	(9.35)	(11.6)
RTI ANALYSIS**										
1st Analysis	Date	7/1/87	7/1/87	7/1/87	7/1/87	7/1/87	7/1/87	7/1/87	7/1/87	7/1/87
	PPB	(9.74 ± 1.0)	(9.43 ± 1.0)	(10.3 ± 0.6)	(10.6 ± 0.6)	(10.4 ± 0.6)	(9.34 ± 0.5)	(10.1 ± 0.6)	(9.40 ± 0.5)	(12.3 ± 0.7)
2nd Analysis	Day**	50	50	50	50	50	50	50	50	50
	PPB	NA	(9.62 ± 1.1)	(10.0 ± 0.6)	(10.3 ± 0.6)	(10.2 ± 0.6)	(9.25 ± 0.5)	(9.92 ± 0.6)	(9.56 ± 0.5)	(12.0 ± 0.7)
RTI QUALITY CONTROL***										
1st Analysis	Day	7/1/87	7/1/87	7/1/87	7/1/87	7/1/87	7/1/87	7/1/87	7/1/87	7/1/87
	PPB	(9.80 ± 1.0)	(8.65 ± 1.0)	(10.1 ± 0.6)	(10.6 ± 0.6)	(9.92 ± 0.6)	(10.0 ± 0.6)	(9.73 ± 0.6)	(9.80 ± 0.5)	(10.0 ± 0.6)
NBS Concen.	PPB	(10.6 ± 1.0)	(9.39 ± 0.9)	(10.2 ± 0.5)	(10.6 ± 0.5)	(9.92 ± 0.5)	(10.0 ± 0.5)	(9.8 ± 0.5)	(10.1 ± 0.5)	(9.96 ± 0.5)
2nd Analysis	Day	50	50	50	50	50	50	50	50	50
	PPB	(9.73 ± 1.0)	(8.80 ± 1.0)	(10.1 ± 0.6)	(10.5 ± 0.6)	(9.61 ± 0.6)	(10.0 ± 0.6)	(9.66 ± 0.6)	(9.59 ± 0.5)	(9.83 ± 0.6)
NBS Concen.	PPB	(10.6 ± 1.0)	(9.39 ± 0.9)	(10.2 ± 0.5)	(10.6 ± 0.5)	(9.92 ± 0.5)	(10.0 ± 0.5)	(9.80 ± 0.5)	(10.1 ± 0.5)	(9.96 ± 0.5)

*Calibration was performed using an NBS primary standard.
**Number of days after 1st RTI analysis.
***A different NBS primary standard was analyzed as internal quality control on each day of RTI analysis.
****All analyses were performed using automated cryogenic preconcentration with cryofocusing followed by GC/FID.
"NA" - Not Analyzed

STABILITY STUDY FOR GROUP V COMPOUNDS*
Cylinder V-A4

ACTIVITY		COMPOUND								
		Vinyl Chloride	Chloroform	Carbon Tetrachloride	Methylene Chloride	1,2-Dichloro-ethane	Trichloro-ethylene	Benzene	Tetrachloro-ethylene	1,3-Butadiene
MANUFACTURER ANALYSIS										
Theoretical	PPB	(5.00)	(5.00)	(5.00)	(5.00)	(5.00)	(5.00)	(5.00)	(5.00)	(5.00)
1st Analysis	Date	2/13/87	2/13/87	1/27/87	2/13/87	2/13/87	2/13/87	2/13/87	2/13/87	2/13/87
	PPB	(4.91)	(4.85)	(4.27)	(5.15)	(5.16)	(5.12)	(4.98)	(5.15)	(5.60)
2nd Analysis	Date	3/16/87	3/16/87	3/25/87	3/16/87	3/16/87	3/16/87	3/16/87	3/16/87	3/16/87
	PPB	(5.16)	(4.48)	(4.32)	(4.99)	(4.95)	(4.94)	(4.92)	(4.67)	(5.65)
RTI ANALYSIS****										
1st Analysis	Date	6/30/87	6/30/87	6/30/87	6/30/87	6/30/87	6/30/87	6/30/87	6/30/87	6/30/87
	PPB	(5.08 ± 0.3)	(4.86 ± 0.3)	(4.60 ± 0.3)	(5.13 ± 0.6)	(5.10 ± 0.3)	(5.39 ± 0.3)	(4.66 ± 0.3)	(5.21 ± 0.4)	(5.52 ± 0.6)
2nd Analysis	Day**	49	49	49	49	49	49	49	49	49
	PPB	(4.93 ± 0.3)	(4.76 ± 0.3)	(4.88 ± 0.3)	(5.18 ± 0.6)	(5.00 ± 0.3)	(5.40 ± 0.3)	(4.72 ± 0.3)	(5.22 ± 0.4)	NA
RTI QUALITY CONTROL***										
1st Analysis	Date	6/30/87	6/30/87	6/30/87	6/30/87	6/30/87	6/30/87	6/30/87	6/30/87	6/30/87
	PPB	(9.48 ± 0.6)	(10.6 ± 0.7)	(10.6 ± 0.7)	(10.6 ± 1.2)	(10.0 ± 0.6)	(10.4 ± 0.7)	(8.92 ± 0.5)	(9.89 ± 0.7)	NA
NBS Concen.	PPB	(9.69 ± 0.5)	(10.8 ± 0.5)	(11.0 ± 0.6)	(10.6 ± 1.1)	(9.95 ± 0.5)	(10.5 ± 0.5)	(9.36 ± 0.5)	(9.96 ± 0.5)	(8.76 ± 0.9)
2nd Analysis	Day	49	49	49	49	49	49	49	49	49
	PPB	NA	(10.7 ± 0.7)	(10.7 ± 0.7)	(10.6 ± 1.2)	(9.95 ± 0.6)	(10.4 ± 0.7)	(9.00 ± 0.5)	(9.93 ± 0.7)	NA
NBS Concen.	PPB	(9.69 ± 0.5)	(10.8 ± 0.5)	(10.9 ± 0.6)	(10.6 ± 1.1)	(9.95 ± 0.5)	(10.5 ± 0.5)	(9.36 ± 0.5)	(9.96 ± 0.5)	(8.76 ± 0.9)

(Continued)

*Calibration was performed using an NBS primary standard.

**Number of days after 1st RTI analysis.

***A different NBS primary standard was analyzed as internal quality control on each day of RTI analysis.

****All analyses were performed using automated cryogenic preconcentration with cryofocusing followed by GC/FID.

"NA" - Not Analyzed

STABILITY STUDY FOR GROUP V COMPOUNDS* (Continued)
Cylinder V-A4

ACTIVITY		COMPOUND								
		Bromomethane	Trichloro-fluoromethane	1,1,1-Tri-chloroethane	1,2-Dichloro-propane	1,2-Dibromo-ethane	Toluene	Chloro-benzene	Ethyl-benzene	o-Xylene
MANUFACTURER ANALYSIS										
Theoretical	PPB	(10.0)	(10.0)	(10.0)	(10.0)	(10.0)	(10.0)	(10.0)	(10.0)	(10.0)
1st Analysis	Date	2/13/87	1/27/87	2/13/87	2/13/87	2/13/87	2/13/87	2/13/87	2/13/87	2/13/87
	PPB	(8.99)	(9.39)	(10.1)	(11.0)	(11.1)	(9.57)	(10.7)	(9.60)	(11.7)
2nd Analysis	Date	3/16/87	3/25/87	3/16/87	3/16/87	3/16/87	3/16/87	3/16/87	3/16/87	3/16/87
	PPB	(8.81)	(11.0)	(10.8)	(10.6)	(11.0)	(9.10)	(9.97)	(9.69)	(12.0)
RTI ANALYSIS****										
1st Analysis	Date	6/30/87	6/30/87	6/30/87	6/30/87	6/30/87	6/30/87	6/30/87	6/30/87	6/30/87
	PPB	(8.72 ± 0.9)	(8.90 ± 1.0)	(10.1 ± 0.6)	(10.5 ± 0.6)	(9.88 ± 0.6)	(9.34 ± 0.5)	(9.95 ± 0.6)	(9.06 ± 0.5)	(11.6 ± 0.7)
2nd Analysis	Day**	49	49	49	49	49	49	49	49	49
	PPB	(8.36 ± 0.9)	(9.13 ± 1.0)	(10.1 ± 0.6)	(10.5 ± 0.6)	(9.52 ± 0.6)	(9.62 ± 0.5)	(10.0 ± 0.6)	(9.78 ± 0.5)	(11.8 ± 0.7)
RTI QUALITY CONTROL***										
1st Analysis	Day	6/30/87	6/30/87	6/30/87	6/30/87	6/30/87	6/30/87	6/30/87	6/30/87	6/30/87
	PPB	(9.72 ± 1.0)	(8.70 ± 1.0)	(10.1 ± 0.6)	(10.5 ± 0.6)	(9.52 ± 0.6)	(9.98 ± 0.6)	(9.58 ± 0.6)	(9.56 ± 0.5)	(9.65 ± 0.5)
NBS Concen.	PPB	(10.6 ± 1.0)	(9.40 ± 0.9)	(10.2 ± 0.5)	(10.6 ± 0.5)	(9.92 ± 0.5)	(10.0 ± 0.5)	(9.80 ± 0.5)	(10.1 ± 0.5)	(9.96 ± 0.5)
2nd Analysis	Day	49	49	49	49	49	49	49	49	49
	PPB	(9.68 ± 1.0)	(8.65 ± 1.0)	(10.1 ± 0.6)	(10.4 ± 0.6)	(9.48 ± 0.6)	(10.0 ± 0.6)	(9.62 ± 0.6)	(9.63 ± 0.5)	(9.72 ± 0.5)
NBS Concen.	PPB	(10.6 ± 1.0)	(9.39 ± 0.9)	(10.2 ± 0.5)	(10.6 ± 0.5)	(9.92 ± 0.5)	(10.0 ± 0.5)	(9.80 ± 0.5)	(10.1 ± 0.5)	(9.96 ± 0.5)

*Calibration was performed using an NBS primary standard.
**Number of days after 1st RTI analysis.
***A different NBS primary standard was analyzed as internal quality control on each day of RTI analysis.
****All analyses were performed using automated cryogenic preconcentration with cryofocusing followed by GC/FID.
"NA" - Not Analyzed

STABILITY STUDY FOR GROUP V COMPOUNDS*
Cylinder V-A5

ACTIVITY		COMPOUND								
		Vinyl Chloride	Chloroform	Carbon Tetrachloride	Methylene Chloride	1,2-Dichloro-ethane	Trichloro-ethylene	Benzene	Tetrachloro-ethylene	1,3-Butadiene
MANUFACTURER ANALYSIS										
Theoretical	PPB	(10.0)	(10.0)	(10.0)	(10.0)	(10.0)	(10.0)	(10.0)	(10.0)	(10.0)
1st Analysis	Date	2/18/87	2/16/87	12/23/86	2/18/87	2/18/87	2/18/87	2/18/87	2/18/87	2/18/87
	PPB	(9.98)	(10.8)	(9.98)	(10.5)	(11.2)	(11.4)	(9.93)	(11.4)	(10.7)
2nd Analysis	Date	3/18/87	3/18/87	3/24/87	3/18/87	3/18/87	3/18/87	3/18/87	3/18/87	3/18/87
	PPB	(10.3)	(11.1)	(9.47)	(10.6)	(11.4)	(11.6)	(10.3)	(11.7)	(10.9)
RTI ANALYSIS**										
1st Analysis	Date	6/30/87	6/30/87	6/30/87	6/30/87	6/30/87	6/30/87	6/30/87	6/30/87	6/30/87
	PPB	(10.2 ± 0.6)	(10.2 ± 0.7)	(10.0 ± 0.6)	(11.1 ± 1.3)	(10.5 ± 0.6)	(11.0 ± 0.7)	(9.24 ± 0.5)	(10.6 ± 0.8)	(10.6 ± 1.2)
2nd Analysis	Day**	49	49	49	49	49	49	49	49	49
	PPB	NA	(10.6 ± 0.7)	(9.94 ± 0.6)	(10.8 ± 1.2)	(9.90 ± 0.6)	(10.8 ± 0.7)	(9.23 ± 0.5)	(10.5 ± 0.8)	NA
RTI QUALITY CONTROL***										
1st Analysis	Date	6/30/87	6/30/87	6/30/87	6/30/87	6/30/87	6/30/87	6/30/87	6/30/87	6/30/87
	PPB	(9.48 ± 0.6)	(10.6 ± 0.7)	(10.6 ± 0.7)	(10.6 ± 1.2)	(10.0 ± 0.6)	(10.4 ± 0.7)	(8.92 ± 0.5)	(9.89 ± 0.7)	NA
NBS Concen.	PPB	(9.69 ± 0.5)	(10.8 ± 0.5)	(11.0 ± 0.6)	(10.6 ± 1.1)	(9.95 ± 0.5)	(10.5 ± 0.5)	(9.36 ± 0.5)	(9.96 ± 0.5)	(8.76 ± 0.9)
2nd Analysis	Day	49	49	49	49	49	49	49	49	49
	PPB	NA	(10.7 ± 0.7)	(10.7 ± 0.7)	(10.6 ± 1.2)	(9.95 ± 0.6)	(10.4 ± 0.7)	(9.00 ± 0.5)	(9.93 ± 0.7)	NA
NBS Concen.	PPB	(9.69 ± 0.5)	(10.8 ± 0.5)	(10.9 ± 0.6)	(10.6 ± 1.1)	(9.95 ± 0.5)	(10.5 ± 0.5)	(9.36 ± 0.5)	(9.96 ± 0.5)	(8.76 ± 0.9)

(Continued)

*Calibration was performed using an NBS primary standard.
**Number of days after 1st RTI analysis.
***A different NBS primary standard was analyzed as internal quality control on each day of RTI analysis.
****All analyses were performed using automated cryogenic preconcentration with cryofocusing followed by GC/FID.
"NA" - Not Analyzed

STABILITY STUDY FOR GROUP V COMPOUNDS* (Continued)
Cylinder V-A5

ACTIVITY		COMPOUND								
		Bromomethane	Trichloro-fluoromethane	1,1,1-Tri-chloroethane	1,2-Dichloro-propane	1,2-Dibromo-ethane	Toluene	Chloro-benzene	Ethyl-benzene	o-Xylene
MANUFACTURER ANALYSIS										
Theoretical	PPB	(5.00)	(5.00)	(5.00)	(5.00)	(5.00)	(5.00)	(5.00)	(5.00)	(5.00)
1st Analysis	Date	2/18/87	12/23/86	2/18/87	2/18/87	2/18/87	2/18/87	2/18/87	2/18/87	2/18/87
	PPB	(4.84)	(5.31)	(5.38)	(5.84)	(6.37)	(5.39)	(5.96)	(5.52)	(5.79)
2nd Analysis	Date	3/18/87	3/24/87	3/18/87	3/18/87	3/18/87	3/18/87	3/18/87	3/18/87	3/18/87
	PPB	(4.87)	(5.04)	(5.68)	(5.99)	(6.45)	(5.57)	(6.22)	(5.86)	(6.18)
RTI ANALYSIS****										
1st Analysis	Date	6/30/87	6/30/87	6/30/87	6/30/87	6/30/87	6/30/87	6/30/87	6/30/87	6/30/87
	PPB	(5.08 ± 0.5)	(5.18 ± 0.6)	(5.25 ± 0.3)	(5.51 ± 0.3)	(5.48 ± 0.3)	(5.38 ± 0.3)	(5.44 ± 0.3)	(5.14 ± 0.3)	(5.78 ± 0.3)
2nd Analysis	Day**	49	49	49	49	49	49	49	49	49
	PPB	(4.96 ± 0.5)	(5.26 ± 0.6)	(5.12 ± 0.3)	(5.40 ± 0.3)	(5.50 ± 0.3)	(5.24 ± 0.3)	(5.50 ± 0.3)	(5.21 ± 0.3)	(5.48 ± 0.3)
RTI QUALITY CONTROL***										
1st Analysis	Day	6/30/87	6/30/87	6/30/87	6/30/87	6/30/87	6/30/87	6/30/87	6/30/87	6/30/87
	PPB	(9.72 ± 1.0)	(8.70 ± 1.0)	(10.1 ± 0.6)	(10.5 ± 0.6)	(9.52 ± 0.6)	(9.98 ± 0.6)	(9.58 ± 0.6)	(9.56 ± 0.5)	(9.65 ± 0.5)
NBS Concen.	PPB	(10.6 ± 1.0)	(9.39 ± 0.9)	(10.2 ± 0.5)	(10.6 ± 0.5)	(9.92 ± 0.5)	(10.0 ± 0.5)	(9.80 ± 0.5)	(10.1 ± 0.5)	(9.96 ± 0.5)
2nd Analysis	Day	49	49	49	49	49	49	49	49	49
	PPB	(9.68 ± 1.0)	(8.65 ± 1.0)	(10.1 ± 0.6)	(10.4 ± 0.6)	(9.48 ± 0.6)	(10.0 ± 0.6)	(9.67 ± 0.6)	(9.63 ± 0.5)	(9.72 ± 0.5)
NBS Concen.	PPB	(10.6 ± 1.0)	(9.39 ± 0.9)	(10.2 ± 0.5)	(10.6 ± 0.5)	(9.92 ± 0.5)	(10.0 ± 0.5)	(9.80 ± 0.5)	(10.1 ± 0.5)	(9.96 ± 0.5)

*Calibration was performed using an NBS primary standard.
**Number of days after 1st RTI analysis.
***A different NBS primary standard was analyzed as internal quality control on each day of RTI analysis.
****All analyses were performed using automated cryogenic preconcentration with cryofocusing followed by GC/FID.
"NA" - Not Analyzed

STABILITY STUDY FOR GROUP V COMPOUNDS*
Cylinder V-A6

ACTIVITY		COMPOUND								
		Vinyl Chloride	Chloroform	Carbon Tetrachloride	Methylene Chloride	1,2-Dichloro-ethane	Trichloro-ethylene	Benzene	Tetrachloro-ethylene	1,3-Butadiene
MANUFACTURER ANALYSIS										
Theoretical	PPB	(10.0)	(10.0)	(10.0)	(10.0)	(10.0)	(10.0)	(10.0)	(10.0)	(10.0)
1st Analysis	Date	2/17/87	2/17/87	12/23/86	2/17/87	2/17/87	2/17/87	2/17/87	2/17/87	2/17/87
	PPB	(9.66)	(10.5)	(9.83)	(10.2)	(10.8)	(11.1)	(9.74)	(11.5)	(11.8)
2nd Analysis	Date	3/24/87	3/24/87	3/24/87	3/24/87	3/24/87	3/24/87	3/24/87	3/24/87	3/24/87
	PPB	(10.3)	(10.6)	(9.31)	(10.3)	(10.8)	(11.0)	(9.78)	(10.8)	(12.4)
RTI ANALYSIS****										
1st Analysis	Date	7/1/87	7/1/87	7/1/87	7/1/87	7/1/87	7/1/87	7/1/87	7/1/87	7/1/87
	PPB	(9.71 ± 0.6)	(10.2 ± 0.7)	(9.73 ± 0.6)	(10.1 ± 1.2)	(10.1 ± 0.6)	(10.7 ± 0.7)	(9.00 ± 0.5)	(10.2 ± 0.7)	(10.5 ± 1.1)
2nd Analysis	Day**	50	50	50	50	50	50	50	50	50
	PPB	(9.80 ± 0.6)	(10.5 ± 0.7)	(10.0 ± 0.6)	(10.3 ± 1.2)	(9.84 ± 0.6)	(10.6 ± 0.7)	(9.27 ± 0.5)	(10.1 ± 0.7)	(10.1 ± 1.1)
RTI QUALITY CONTROL***										
1st Analysis	Date	7/1/87	7/1/87	7/1/87	7/1/87	7/1/87	7/1/87	7/1/87	7/1/87	7/1/87
	PPB	(9.40 ± 0.6)	(10.5 ± 0.8)	(10.4 ± 0.7)	(10.6 ± 1.2)	(10.2 ± 0.6)	(10.5 ± 0.7)	(8.96 ± 0.5)	(10.1 ± 0.7)	NA
NBS Concen.	PPB	(9.69 ± 0.5)	(10.8 ± 0.5)	(10.9 ± 0.6)	(10.6 ± 1.1)	(9.95 ± 0.5)	(10.5 ± 0.5)	(9.36 ± 0.5)	(9.96 ± 0.5)	(8.76 ± 0.9)
2nd Analysis	Day	50	50	50	50	50	50	50	50	50
	PPB	(9.45 ± 0.6)	(10.6 ± 0.7)	(10.5 ± 0.7)	(10.6 ± 1.2)	(9.94 ± 0.6)	(10.4 ± 0.7)	(9.03 ± 0.5)	(9.85 ± 0.7)	(8.40 ± 0.9)
NBS Concen.	PPB	(9.69 ± 0.5)	(10.8 ± 0.5)	(10.9 ± 0.6)	(10.6 ± 1.1)	(9.95 ± 0.5)	(10.5 ± 0.5)	(9.36 ± 0.5)	(9.96 ± 0.5)	(8.76 ± 0.9)

*Calibration was performed using an NBS primary standard.

(Continued)

**Number of days after 1st RTI analysis.

***A different NBS primary standard was analyzed as internal quality control on each day of RTI analysis.

****All analyses were performed using automated cryogenic preconcentration with cryofocusing followed by GC/FID.

"NA" - Not Analyzed

STABILITY STUDY FOR GROUP V COMPOUNDS* (Continued)
Cylinder V-A6

ACTIVITY		COMPOUND								
		Bromomethane	Trichloro-fluoromethane	1,1,1-Tri-chloroethane	1,2-Dichloro-propane	1,2-Dibromo-ethane	Toluene	Chloro-benzene	Ethyl-benzene	o-Xylene
MANUFACTURER ANALYSIS										
Theoretical	PPB	(5.00)	(5.00)	(5.00)	(5.00)	(5.00)	(5.00)	(5.00)	(5.00)	(5.00)
1st Analysis	Date	2/17/87	12/23/86	2/17/87	2/17/87	2/17/87	2/17/87	2/17/87	2/17/87	2/17/87
	PPB	(5.57)	(4.45)	(5.18)	(5.82)	(6.10)	(5.28)	(5.52)	(5.53)	(6.18)
2nd Analysis	Date	3/24/87	3/24/87	3/24/87	3/24/87	3/24/87	3/24/87	3/24/87	3/24/87	3/24/87
	PPB	(5.77)	(4.30)	(5.38)	(5.65)	(5.99)	(5.24)	(5.68)	(5.34)	(5.50)
RTI ANALYSIS****										
1st Analysis	Date	7/1/87	7/1/87	7/1/87	7/1/87	7/1/87	7/1/87	7/1/87	7/1/87	7/1/87
	PPB	(5.70 ± 0.6)	(4.70 ± 0.5)	(5.10 ± 0.3)	(5.32 ± 0.3)	(5.27 ± 0.3)	(5.06 ± 0.3)	(5.14 ± 0.3)	(4.97 ± 0.3)	(5.23 ± 0.3)
2nd Analysis	Day**	50	50	50	50	50	50	50	50	50
	PPB	(5.60 ± 0.6)	(4.80 ± 0.5)	(5.17 ± 0.3)	(5.20 ± 0.3)	(5.10 ± 0.3)	(4.96 ± 0.3)	(5.18 ± 0.3)	(4.80 ± 0.3)	(5.21 ± 0.3)
RTI QUALITY CONTROL***										
1st Analysis	Day	7/1/87	7/1/87	7/1/87	7/1/87	7/1/87	7/1/87	7/1/87	7/1/87	7/1/87
	PPB	(9.80 ± 1.0)	(8.65 ± 1.0)	(10.1 ± 0.6)	(10.6 ± 0.6)	(9.92 ± 0.6)	(10.0 ± 0.6)	(9.73 ± 0.6)	(9.80 ± 0.5)	(10.0 ± 0.5)
NBS Concen.	PPB	(10.6 ± 1.0)	(9.39 ± 0.9)	(10.2 ± 0.5)	(10.6 ± 0.5)	(9.92 ± 0.5)	(10.0 ± 0.5)	(9.80 ± 0.5)	(10.1 ± 0.5)	(9.96 ± 0.5)
2nd Analysis	Day	50	50	50	50	50	50	50	50	50
	PPB	(9.73 ± 1.0)	(8.80 ± 1.0)	(10.1 ± 0.6)	(10.5 ± 0.6)	(9.61 ± 0.6)	(10.0 ± 0.6)	(9.66 ± 0.6)	(9.59 ± 0.5)	(9.83 ± 0.6)
NBS Concen.	PPB	(10.6 ± 1.0)	(9.39 ± 0.9)	(10.2 ± 0.5)	(10.6 ± 0.5)	(9.92 ± 0.5)	(10.0 ± 0.5)	(9.80 ± 0.5)	(10.1 ± 0.5)	(9.96 ± 0.5)

*Calibration was performed using an NBS primary standard.
**Number of days after 1st RTI analysis.
***A different NBS primary standard was analyzed as internal quality control on each day of RTI analysis.
****All analyses were performed using automated cryogenic preconcentration with cryofocusing followed by GC/FID.
"NA" - Not Analyzed

APPENDIX B
AUDIT INSTRUCTIONS

Memorandum

To: Date:

From: Cynthia Sokol, RTI

This suitcase kit is provided in conjunction with audit gas cylinder(s) which are arriving simultaneously via Overnite Transportation Company.

A letter accompanying the audit cylinder(s) describes their purpose and origin.

The audit gas from the cylinder running through the kit's manifold simulates the ambient emission from the stack through your probe. Follow instructions attached to use the kit materials for your audit.

Please return the suitcase in its shipping box, at your cost, through United Parcel Service (UPS). I have included an address label for the outside of the box.

Insure the suitcase kit for $1000 (only a $2.25 charge)

Thank you!

VOST AUDIT KIT INVENTORY

QTY	DESCRIPTION
1	GLASS MANIFOLD with Teflon nut and ferrule on one end
1	HEATING TAPE (wrapped around manifold)
1	1/8" TEFLON TUBING (about 3 feet) with: 1/4 to 1/8" brass Swagelock™ union, one end 1/4" brass Swagelock™ nut, other end
1	REGULATOR, 2 stage, high purity, 350 GCA fitting, with female connector
1	3/8" TEFLON TUBING, "SHORT" with: 3/8" brass Swagelock™ nut
1	ROTAMETER, 3/8" Swagelock™ female connectors on both ends
1	3/8" TEFLON TUBING, "LONG" with: 3/8" brass Swagelock™ nut
1	THERMOMETER, DIAL FACE, 8", 0-150°C
2	TWO-PRONG EXTENSION CLAMPS, 8"
2	RIGHT-ANGLE CLAMP HOLDERS, aluminum thumbscrew type
1	BASE SUPPORT, 4" x 6"
1	ROD FOR BASE SUPPORT, 5/16" diameter, 18" long
1	CYLINDER CLAMP SUPPORT WITH NYLON STRAP
1	HEATER CONTROLLER, for connection to heating tape
1	INSTRUCTION SHEET

Please notify me at once if an item is missing or defective.

Thank you for CAREFULLY repackaging all items.

Cynthia Sokol
(919) 541-6772

INSTRUCTIONS FOR USE OF VOST AUDIT KIT

1. Assemble the support stand (base and rod). Using the clamps supplied, secure the manifold and rotameter vertically to the stand. The larger end of the manifold should be temporarily up, so the thermometer can be inserted.

2. Connect the heating controller to the tape and adjust the dial to heat the manifold to approximately 100°C.

   On assemblies with 1" tape (closely wrapped), a setting of 5 is sufficient to attain 100°C.

   On assemblies with 1/2" tape (loosely wrapped), a setting of 7-1/2 is required.

3. After the manifold temperature has become stable, remove the thermometer, invert the manifold (larger end down) and attach the shorter 3/8" OD tubing by sliding the end sleeve-wise over the glass.

4. Attach the 1/8" tubing (union end) to the teflon nut on the top of the manifold. The 3/8" Swagelock™ nut-end connects to the regulator at the reduced-end fitting.

5. Consult diagram for attaching rotameter, longer exhaust tubing, and audit cylinder.

6. Adjust the regulator to start the gas flow. The audit kit-supplied rotameter is downstream of the manifold and is used to monitor excess gas flow.

7. The rotameter will present negligible back pressure to the manifold. ΔP for 5 L/min is 1 inch of water column.

8. After sampling is completed, allow the manifold to cool, disassemble and repackage the audit kit into the case. Remember to include the teflon nut on the end of the manifold. The tubing can lie flat on top of the repackaged kit, loosely coiled.

9. Ship the case inside the box it came in, by United Parcel Service (UPS)

INSTRUCTION SET NO. 1

INSTRUCTIONS FOR THE SAMPLING AND ANALYSIS OF VOLATILE POHC FROM QUALITY ASSURANCE AUDIT CYLINDERS USING THE BAG TECHNIQUE

1.0 PURPOSE

This audit is intended to assess and document the accuracy and precision of the principal organic hazardous constituents (POHC) using the bag technique during trial burns at hazardous waste burning facilities. This audit also can be used to determine the proficiency of source testing organization prior to the actual trial burn tests.

2.0 PRINCIPLE

A gas sample containing POHC is drawn from an audit gas cylinder into a bag. The collected POHC are analyzed by gas chromatography according to the method specifications and procedures.

3.0 AUDIT MATERIAL (GAS CYLINDERS)

The audit material is contained in gas cylinders. A maximum of 5 L of audit gas is to be used for each test run. A two-stage gas regulator, 1/4-inch male/female glass joints, and Teflon tubing are supplied for use with the gas cylinder.

4.0 PROCEDURES

The following step-by-step procedures should be used for sample collection and analysis using the bag technique.

Step A. Evacuate the bag with a vacuum pump and fill the bag with approximately 5 L of organic-free nitrogen from a gas cylinder. Tedlar bags are recommended. Determine the hazardous constituents of interest by gas chromatography. Report the concentrations determined as Blank Value 1. The blank value must be not more than twice the detection limit. If it is higher, the bag cleaning procedure should be repeated.

Step B. After the blank analysis, evacuate the bag with a vacuum pump and fill the bag with approximately 5 L of audit gas from the audit cylinder. The 1/4 inch male/female glass joints that are supplied should be used as connections to the bag and the audit cylinder. Minimum Teflon tubing should be used. Determine the POHC of interest by gas chromatography. Report the concentrations of each constituent as Analysis Result 1.

Step C. Evacuate the bag contents and fill the bag with organic free nitrogen (Cleaning Step 1). After 3 minutes, evacuate the bag contents and fill the bag again with nitrogen (Cleaning Step 2). After three minutes, repeat the evacuation procedure and fill the bag with 5 L of nitrogen (Blank 2). Determine the concentration of the bag contents by gas chromatography and report the measured concentration as Blank Value 2. The blank value must not be more than twice the detection limit. If it is higher, the bag cleaning procedure should be repeated.

Step D. Evacuate the bag contents and fill the bag with approximately 5 L of audit gas from the audit cylinder. Determine the POHC of interest by gas chromatography. Report the concentrations determined as Analysis Result 2.

Step E. Repeat Step C and report the measured concentration of the bag contents as Blank Value 3. The blank value must not be more than twice the detection limit. If it is higher, the bag cleaning procedures should be repeated.

Step F. Evacuate the bag contents and fill the bag with approximately 5 L of audit gas from the audit cylinder. Determine the POHC of interest by gas chromatography. Report the concentrations determined as Analysis Result 3.

5.0 SAMPLE ANALYSIS

Follow the procedures described in the method used for sample analysis, calibration, and calculations. Submit the results to the Project Officer and to the audit supervisor for evaluation.

INSTRUCTIONS FOR THE SAMPLING AND ANALYSIS OF VOLATILE POHC FROM QUALITY ASSURANCE AUDIT CYLINDERS USING THE VOLATILE ORGANIC SAMPLING TRAIN

1.0 PURPOSE

This audit is intended to assess and document the accuracy and precision of the volatile organic sampling train (VOST) when used during trial burns at hazardous waste burning facilities. This audit also can be used to determine the proficiency of source testing organization prior to the actual trial burn tests.

2.0 PRINCIPLE

A gas sample containing principal organic hazardous constituents (POHC) is passed from an audit gas cylinder into a glass manifold and is used in place of the test site stack sample. while the POHC gas is being passed into the glass manifold, a major portion of the gas is drawn through a VOST according to the method specifications and procedures. The collected POHC are analyzed by thermal desorption, purge and trap, and gas chromatography/ mass spectrometry (GC/MS) or an equivalent method approved by the EPA.

3.0 APPARATUS

3.1 GLASS MANIFOLD

A glass manifold is supplied. One side of the glass manifold is connected with Teflon tubing to the audit cylinder. The other end of the glass manifold should be connected with Teflon tubing to a rotameter and the excess gas from the rotameter should be vented into a hood. The glass manifold is heated to 100°C with heating tape. The heating tape, rotameter, 1/4-inch male/female glass joints, and Teflon tubing are also supplied. One port of the glass manifold should be connected to the VOST probe with 1/4-inch male/female glass joints. A schematic diagram of the glass manifold is shown in Figure 1.

3.2 VOST COMPONENTS

The sampling train component parts, except for the glass manifold, are the same as those used for VOST.

3.3 ANALYSIS

Refer to the method specifications and procedures for the VOST method.

4.0 AUDIT MATERIAL (GAS CYLINDER)

The audit material is supplied in gas cylinders. A maximum of 50 L of gas is to be used for each test run. A two-stage gas regulator is supplied for use with the gas cylinder.

5.0 PROCEDURES

5.1 SAMPLING

5.1.1 Preparation of VOST

All train components should be cleaned and assembled as described in the VOST method use.

5.1.3 Sample Generation

The gas sample from the audit cylinder is passed through the glass manifold at a flow rate of 2 L/min for 3 minutes to condition the glass system. A glass rotameter is supplied to measure the flow rate at the end of the glass manifold. The VOST probe then should be connected to one port of the glass manifold with 1/4 inch male/female joints and the probe should be purged with audit gas for an additional 2 minutes so that the probe is purged of ambient air before initiation of sample collection. This can be accomplished either by attaching a pump to a three-way stop-cock above the first condenser and drawing audit gas through the probe via the three-way stop-cock or by any other suitable method.

5.2 SAMPLE COLLECTION

After leak-checking and conditioning the glass probe, sample collection is accomplished by opening the valve at the inlet to the first condenser, turning on the pump and sampling at a rate of 0.5 L/min for 20 minutes or 1L/min for 10min. The sampling rate is measured with the rotameter which is part of the VOSt. The volume of sample for any pair of the traps should not exceed 10 L. The temperature of the gas stream at the inlet to the first sorbent cartridge must be maintained at 20°C during sample collection.

After the collection of 10 L of sample, the train is leak-tested using the procedures described in the method used. If leak-test criteria as described in the method are not met, the samples should not be analyzed. If

leak-test criteria are met, the train is returned to atmospheric pressure, the two sorbent cartridges are removed, the end caps are replaced, and analysis of cartridges is performed.

Repeat the sample collection procedure tow more times with two new paris of sample cartridges in the VOST, collect 10 L of sample each time, and perform the analysis.

5.3 SAMPLE ANALYSIS

Follow the procedures described in the method for sample analysis, calibration, and calculations. Report the amount of each constituent in the three samples and the blank values to the Project Officer and the audit supervisor for evaluation.

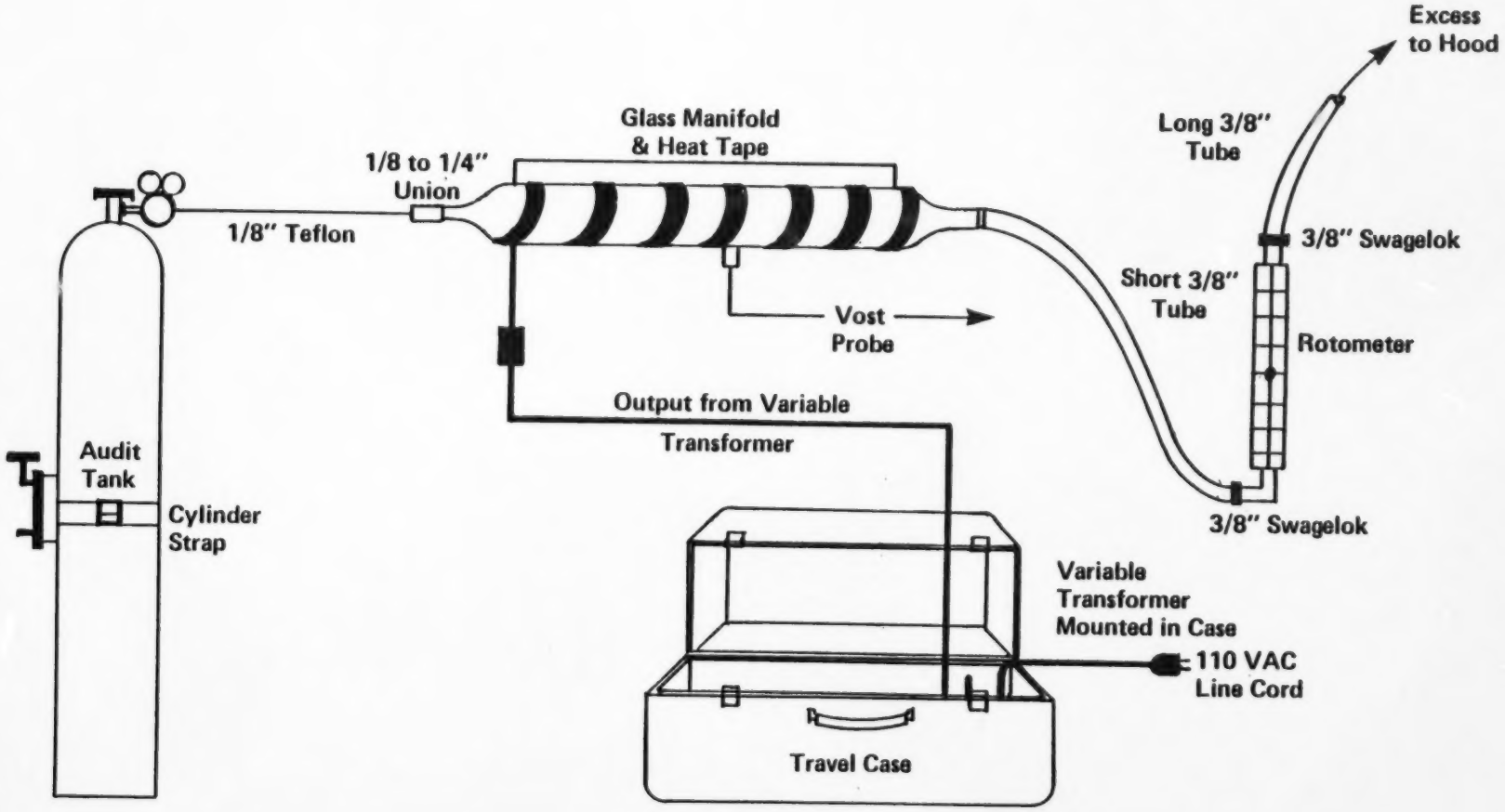

Figure 1. Schematic Diagram of Audit Material Delivery System